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ISONIAZID IN THE TREATMENT OF PULMONARY TUBERCULOSIS

A SUMMARY OF THE SECOND REPORT OF THE TUBERCULOSIS CHEMOTHERAPY TRIALS COMMITTEE OF THE MEDICAL RESEARCH COUNCIL

The Tuberculosis Chemotherapy Trials Committee recently published their *Second Report*, which appeared *in extenso* in the *British Medical Journal* of 7 March 1953 (**1**, 521).

The Committee's *First Report*[1] was published on 4 October 1952. It compared the value of isonicotinic acid hydrazide (isoniazid) with that of streptomycin + para-aminosalicylic acid (PAS) in the treatment of pulmonary tuberculosis in a series of 331 patients after 3 months observation and treatment, and suggested that over this period the 2 remedies lay within the same range of efficacy. It demonstrated, however, a frequent and rapid development of bacterial resistance to isoniazid and showed that this seriously affected the response to treatment.

The *Second Report* studies the effects of streptomycin combined with isoniazid as compared with the treatment studied in the *First Report*, and it presents the progress of 364 patients with pulmonary tuberculosis in 40 hospitals in Britain, who were specifically treated for 3 months. These cases, with a few exceptions, (1) were T.B. positive, (2) were not, as far as known, infected with T.B. which were streptomycin- or PAS-resistant, (3) had not previously received more than certain stipulated maxima of the 3 drugs, and (4) were not undergoing collapse therapy for the lung requiring treatment.

The cases are divided in the *Report* into 3 main disease-groups: (1) acute rapidly progressive, and of recent origin, (2) other forms suitable for chemotherapy, and (3) chronic forms expected to make only a limited response to streptomycin + PAS. Under these 3 headings 8 sub-groups were defined on grounds of age and clinical type. In the present summary the results of the tests are not given separately for these groups and sub-groups.

TREATMENT

The dosage used was as follows: *Streptomycin* (not dihydrostreptomycin), 1 g. daily in one intramuscular injection; *PAS*, 20 g. of the sodium salt daily in 4 doses by mouth; isoniazid, 200 mg. daily in 2 doses by mouth. Children received smaller doses.

Of the 364 cases, 102 were treated with streptomycin + PAS ('SP'), 120 with isoniazid alone ('H') and 142 with streptomycin + isoniazid ('SH'). These figures exclude 39 cases who were originally admitted to the test but were subsequently excluded for various reasons (13 because of drug intolerance—11 to streptomycin and 2 to PAS). It is noted that in no case was there any interference with the prescribed régime of isoniazed due to toxicity. On admission the 3 treatment-series had a similar distribution of patients with severe and less severe illnesses.

RESULTS OF TREATMENT

The results of treatment were separately assessed at the end of 3 months in 6 ways:

1. on general condition, assessed by the physician on clinical observations, the patient's appearance, and his feeling of well-being (or lack of it);
2. on weight changes;
3. on the change from febrile state to afebrile state;
4. on the change in blood sedimentation rate (from raised to normal);
5. on changes in radiographic appearances, independently assessed by a radiologist unaware of the treatment of any patient;
6. on the disappearance of T.B. from sputum.

The results of the assessment were as follows:

General Condition. The general condition of the majority of patients had improved and in this respect the differences between the 3 treatment-series (SP, H and SH) were small.

Weight. The average gains in weight were 6 lb. in SP cases, 13 lb. in H cases, and 13 lb. in SH cases.

Temperature. The temperature of febrile cases fell to normal in 76% of cases in the SP series, 68% in the H series, and 82% in the SH series.

Blood Sedimentation. In patients with a sedimentation rate of 21 or more the rate fell to 10 or less in 21% of cases in the SP series, 25% in the H series, and 45% in the SH series.

Radiographic. 2-plus or 3-plus radiographic improvement was seen in 31% of cases in the SP series, 23% in the H series and 38% in the SH series.

Bacteriological. The proportion of patients showing no T.B. in the sputum both on direct examination and on culture, at a single examination at 3 months, was 55% of the SP cases, 37% of the H series, and 67% of the SH cases.

These results are grouped in the following table:

	Weight increases in lb.	*Percentage of cases improved*			
		Temperature	*Blood sedimentation*	*Radiographic*	*Bacteriological*
Streptomycin + PAS (SP)	6	76	21	31	55
Isoniazid (H) ..	13	68	25	23	37
Streptomycin + Isoniazid (SH) ..	13	82	45	38	67

There was 1 radiographic deterioration and 2 deaths in

1. Brit. Med. J. (1952): **2**, 735.

the SP cases, 11 deteriorations and 1 death in the H cases and 3 deteriorations and 1 death in the SH cases.

It is concluded *judging solely from the results at 3 months* that streptomycin + isoniazid, with the dosages used, is clinically the most effective of the treatments studied, although its superiority to streptomycin 1 g. daily + PAS 20 g. daily is not great. A full evaluation must await a longer period of observation.

BACILLARY RESISTANCE

Strains of T.B. isolated from sputum collected before starting treatment and subsequently at least once a month, were tested for streptomycin-sensitivity in the SP and SH patients and for isoniazid-sensitivity in the H and SH patients. In addition PAS-sensitivity was estimated in patients for whom a history of one month or more of previous treatment with PAS alone was obtained. The technique for the determination of isoniazid-sensitivity is described in the *Report*.

Bacillary resistance to isoniazid was found in 62% of culture-positive H patients tested at 3 months, compared with only 13% for similar SH patients. Bacillary resistance to streptomycin was found in 11% of the SH patients at 3 months. Thus the combination of streptomycin + isoniazid, with the dosages studied, is as effective for 3 months in preventing the development of streptomycin-resistance as of isoniazid-resistance. Further, for 3 months the SH treatment is as effective as the SP treatment in preventing the emergence of bacilli resistant to streptomycin.

Patients with organisms initially streptomycin-resistant were apparently not protected from the risk of development of isoniazid-resistance by the SH treatment; patients with organisms initially PAS-resistant (who had had prior treatment with PAS alone) were not protected from the risk of development of streptomycin-resistance by the SP treatment. Thus none of the 3 drugs, isoniazid, streptomycin or PAS, should be used by itself, nor should 2 of them be used in combination for a patient whose bacilli are already resistant for one of the pair. Whenever possible, the drug sensitivity of a patient's bacilli should be assessed before chemotherapy is started, to avoid an unsuitable combination of drugs; and also on its completion, in case more chemotherapy is required later. It is suggested that if it is considered undesirable to delay treatment until a sensitivity test is completed the clinician should inquire into previous chemotherapy, and the results of sensititvity in any known contact, before deciding upon a treatment combination.

There is a great need for simple, reliable and speedy techniques for the culture of tubercle bacilli and for the determination of their sensitivity to chemotherapeutic agents.

The trial which this *Second Report* records was designed so that it could be modified to study fresh problems in the light of information it had itself yielded; at present the effects of 2 different dosages of streptomycin and 2 of PAS, each in combination with isoniazid are under investigation.

THE URETHRAL SYNDROME IN WOMEN

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The female urethra is often the site of disease responsible for various symptoms which have been thought to result from pathological conditions elsewhere in the urinary tract or of the uterus and its adnexa. It has been found that if more attention is paid to this short and often much overlooked component of the urinary tract during the course of an instrumental examination, one is more likely to be able to find a comparatively simple cause for the patient's symptoms which in most cases will respond to equally simple methods of treatment. The condition of chronic urethritis, also known as granular urethritis or non-purulent urethritis, is the most common urinary disease in women and it is responsible for much discomfort and often a great deal of suffering.

SYMPTOMS

The patient is usually a married woman, the condition being uncommon in young and unmarried women. Of the various symptoms which might occur the two most constant are increased frequency of micturition and dysuria.

The increased frequency varies in severity from slight to an almost constant desire to void. It tends to worry the patient more during the earlier part of the day, and although nocturia does occur, it may be absent in many cases: this point in the history may be helpful in localizing the source of the trouble to the urethra instead of to the bladder, as bladder conditions tend to result in a more constant nocturia.

Dysuria may occur either as a pain or as burning accompanying micturition. It is most often present at the commencement or at the end of the act, but some cases experience dysuria throughout. Like the increased frequency, the dysuria varies in its severity from case to case. The patient may have periods of comparative relief from both; others are seldom free from symptoms.

Apart from the above, urgency is not infrequently present, and in some cases it may be so marked that the patient cannot reach the toilet quickly enough; such a history of false incontinence should not be confused with true incontinence. There may be a feeling that the bladder

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has been emptied incompletely. Haematuria, usually terminal, occurs in some cases, especially during the acute stage initially or during an acute exacerbation, which can occur from time to time.

These urinary symptoms may commence or flare up after coitus, especially from over-indulgence or following a lengthy period of abstinence. Masturbation by producing urethral congestion may also be responsible in precipitating the symptoms. They may be worse during menstruation owing to the state of congestion in the pelvis. The symptoms of a so-called 'honeymoon cystitis' are in reality due to a urethritis, the term defloration urethritis thus being more appropriate. Dyspareunia of varying degrees can be associated with chronic urethritis.

Apart from these disturbances of micturition chronic urethritis can be associated with many bizarre aches and pains occurring at various sites and thought to be referred in nature. The pain is usually more in the form of a dull ache, but at times can be severe and colicky. It may occur in the groins and thighs or across the lower abdomen suprapubically. When present in the lumbo-sacral region it may be thought to be due to abnormalities in the uterus and its adnexa. Many women accept lower backache as an inheritance coming to members of their sex and various methods of conservative and operative treatment may be tried before the real cause is recognized. If it be remembered that the urethra may be at fault and this be attended to, much discomfort will be eliminated by relatively simple means.

Varying degrees of pain can be present in either or both iliac fossae, and apart from the ovary or appendix being suspected, the presence of ureteric strictures or spastic ureteritis may be thought responsible rather than the urethritis. There has been much controversy regarding the relative importance of the ureter *versus* the urethra as the site of origin of pain in the iliac fossae. The presence of definite areas of irregularity and/or narrowing at the lower end of the ureter on an intravenous or retrograde urogram is indicative of chronic ureteritis; if there is in addition some dilatation of the ureter immediately proximal, obstructive pathology can be said to be present with certainty, and in these cases the pain is, if not entirely, at least in part due to this lesion in the ureter. Hanley and other observers believe that these pains are due to an associated ureteritis resulting from ascending lymphatic spread from the urethro-trigonal area; if this is so, one finds it difficult to explain why simple dilatation of the urethra alone in many cases results in relief or disappearance of the pain without having to resort to dilatation of the ureter. At this stage it is appropriate to quote Folsom's paraphrase of Cabot's famous saying thus: 'Any pain within two feet of the female urethra for which one cannot find an adequate explanation should be suspected of coming from the female urethra.'

DIAGNOSIS

Instrumentation of the urethra is very important, and much valuable information towards establishing the diagnosis can be obtained by the passage of a urethral catheter or metal bougie. Undue discomfort experienced during catheterization of a patient who is reasonably relaxed and not over-anxious is suggestive of the presence of urethritis. Tightness of the urethra during instrumentation is also quite commonly encountered and enough importance is often not attached to this finding. The average size of the normal urethra in a woman who has never had any urinary disturbance is 26 French; in chronic urethritis this may be reduced to 20 French. The narrowing is most often present throughout the length of the urethra, often with added increased resistance being encountered at the two extremities of the channel. In some cases a definite annular stricture is present, but this is much more infrequent in these cases of non-specific urethritis than is the presence of a more diffuse tightness or narrowing. A generalized tightness in older patients however, can be part of the post-menopausal changes found in the introitus and vagina. Palpation of the urethra per vaginam over a metal bougie or cysto-urethroscope is important as a diagnostic aid: the urethra affected with chronic urethritis feels thickened, and should stricture formation be present, it is felt as a localized fibrotic area. Urethral palpation will also reveal the presence of a urethral diverticulum, which is not as rare as is often believed, provided it is borne in mind and looked for; it is accompanied by chronic urethritis.

Microscopic examination of a catheter-specimen of urine usually reveals the absence of pus or erythrocytes; an occasional pus-cell may be found, and the urine is more often than not sterile on culture.

Vaginal examination, specular and bimanual, is routinely performed to detect any abnormalities in the genital tract. Chronic cervicitis is thought to play a part in the etiology because of the lymphatic connexion between the cervix and the urethro-trigonal area. If leucorrhoea is present, a vaginal smear will be useful in determining the offending organism, if present, and appropriate treatment may be carried out. The presence of pelvic inflammatory disease is an important predisposing or aggravating factor in chronic urethritis because of the associated pelvic congestion which occurs. Appropriate treatment of diseases of the female genital tract will ensure a better end-result to the local treatment of the urethral condition.

Although the diagnosis can be arrived at with some confidence from the history, passage of a catheter or metal bougie and the urinary findings, cysto-urethroscopy is advisable wherever possible to clinch the diagnosis and to assess the degree of pathological change present. The cystoscope has been found unsatisfactory in detecting the changes in the urethral mucosa, even if the concave sheath is used; preliminary urethroscopy with a pan-endoscope is essential, and unless this is done in patients with symptoms suggestive of lower urinary tract disease, the causal lesion might be missed.

After inspection of the external urinary meatus, the ease with which the instrument passes should be noted. In the rare case a stricture might have to be dilated beforehand. The appearances of the mucous membrane vary according to the acuteness and the duration of the condition. There may be congestion of varying degree involving chiefly the proximal half of the urethra; the congestion is most marked during the acute stage initially or during a flare-up, when the mucosa has an intensely red and dull appearance and scattered punctate haemorrhages may be seen. Some cases show the presence of

slightly elevated granular areas; hence the term 'granular urethritis' applied by some. The mucosa may appear oedematous. These inflammatory appearances may extend on to the internal meatus; the trigone may appear normal, although the inflammatory appearances may extend on to it in varying degree, the apex being involved more than any other portion. In the well-established cases, definite polypi of varying translucency may be seen in the most proximal portion of the urethra and at the internal meatus. There may also be tiny cysts on the surface of the mucosa. The occasional well-advanced chronic cases may show the presence of a fibrous bar or some degree of contracture of the internal meatus. The bladder mucosa often has a normal appearance. The examination is completed by vaginal palpation of the urethra over the instrument.

TREATMENT

The most important and basic part of the treatment consists of repeated dilatations of the urethra. These are carried out in the consulting room and marked improvement in the symptoms often results; many cases require no additional measures.

The urethra is dilated with metal urethral bougies or a straight Kollmann dilator at 5–7 day intervals for a period of 4–6 weeks, depending upon the response to treatment. The size to which dilatation is carried out at the first sitting depends on the urethral calibre when first seen. The dilatation should at no time be excessive, and certainly never beyond the point where the instrument is firmly gripped by the urethral wall. The subsequent dilatations are gradually increased at each sitting until the urethra will admit a 30 or 32 French instrument with ease. At the completion of each dilatation ½ oz. of 10% argyrol or 1% silver nitrate is instilled into the urethra. Athough this method of treatment appears to be straightforward in nature, it is important that it be carefully and regularly carried out.

Although many cases respond very favourably to the above treatment, others do not do so well. These have usually been found to have polypi and excessive granular areas on urethroscopy, and cure or relief is obtained only after these lesions are gently fulgurated with an electrode through a pan-endoscope after the course of urethral dilatations has been completed. It must be stressed that over-treatment in the form of excessive and too rapid dilatations, use of solutions of excessive strength for instillations and vigorous fulguration can often do more harm than good.

In cases resistant to treatment, the possibility of the presence of a cervicitis or vaginitis should always be borne in mind. These conditions should always be looked for and treatment for them instituted early and not at the completion of the local treatment to the urethra.

Should the various aches and pains known to be associated with chronic urethritis not improve following treatment of the urethra, intravenous or retrograde urograms might detect the presence of an associated ureteritis, and dilatation might result in relief. In those cases with definite bladder-neck contracture or bar formation with persistence of urinary symptoms and the presence of residual urine, where the more simple measures do not result in satisfactory relief of symptoms, superficial trans-urethral resection of the tissue at the bladder-neck should be considered.

Should the urine culture be positive for pathogens, the use of appropriate chemotherapy or antibiotics is worth a trial. During the stage of acute urinary symptoms, an alkaline mixture containing tincture of hyoscyamus often gives considerable relief. General measures include correction of faulty sex habits and attention to personal hygiene.

The majority of cases respond well to the local treatment of the urethra, and many are permanently cured. Some obtain varying relief at the end of 6 weeks of treatment, and if the course of therapy is repeated after an interval of 2–3 weeks many of these more resistant cases show a better response. Should a remission of symptoms occur following complete relief, and this can occur at periods varying from weeks to years, a further course of treatment will often result in a marked improvement.

SUMMARY

1. The urethra is an oft-neglected component of the female urinary tract, very susceptible to involvement by chronic inflammatory processes and responsible for the commonest urinary complaints for which a female patient seeks medical advice.

2. The symptoms of increased frequency and dysuria, with or without the presence of aches or pains in various situations in the presence of a negative urine is highly suggestive of a chronic urethritis being responsible for the patient's complaints.

3. The importance of performing urethroscopy with a pan-endoscope preliminary to a cystoscopic examination of the bladder is stressed and the appearances in chronic urethritis are described.

4. The fundamental treatment consists of repeated dilatations of the urethra, supplemented by instillations and fulgurations in some cases.

5. The results of treatment are generally very satisfactory, but it is important to remember that over-treatment may do more harm than good.

6. Inflammatory disease of the female genital tract may be a predisposing or aggravating factor, and when present must be appropriately treated to enhance a successful result from local treatment of the urethra.

7. The recognition of the urethral syndrome and its appropriate treatment by relatively simple means will often result in a grateful patient who will be spared much discomfort and inconvenience.

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Suid-Afrikaanse Tydskrif vir Geneeskunde

VAN DIE REDAKSIE

TERING EN CHEMOTHERAPIE

In ons *Tydskrif* verskyn daar hierdie week 'n opsomming van die *Tweede Verslag* deur die Britse Mediese Navorsingsraad se Komitee oor Teringchemotherapie-toetse. Hierdie verslag is uit verskeie oogpunte vir die Suid-Afrikaanse geneeskunde van belang. Ons aandag word gevestig op die vooruitgang wat op die gebied van tering-behandeling gedurende ons huidige geslag gemaak is. Vyftig jaar gelede en minder was longteringlyers met 'n vroeë dood bedreig en weininge het dit ontvlug. Dit het bo aan die sterftesyferlys gestaan, in besonder aan dié van volwassenes, en op die uitwissing daarvan is die hoop van die mensdom gevestig. Die teringstatistiek van baie lande dui aan dat in die jongste tyd heelwat op die gebied van beide voorkoming en behandeling bereik is. Op die pad van die geneeskuns was daar drie mylpale gewees: (1) die erkenning van die belangrikheid van voeding, volkome rus gevolg deur gekontroleerde oefening, en algemene higiëne; (2) die aanwending eerstens van die meer eenvoudige *collapse*-therapie en dan van die groter operasies; en (3) die ontdekking van doeltreffende antibiotiese en ander chemotherapeutiese middele. Die gebruik van hierdie nuwe middele, alhoewel nog proefondervindelik, het alreeds goeie resultate gelewer, en stel die moontlikheid van verdere vordering in die vooruitsig. Die Britse Mediese Navorsingsraad het hul Komitee oor Teringtherapie-toetse in die lewe geroep om hierdie vordering aan te help. Die verslae van hierdie Komitee, wie se werk nog aktief voortgesit word, dien as 'n uitstekende voorbeeld van staatsbeheerde navorsing oor 'n spesifieke probleem, waar gebruik gemaak word van die allerbeste bronne wat tot die land se beskikking is, beide wat personeel en materiaal betref. Die is 'n tegniek, waarvan die grootste voorbeeld die vervaardiging van die atoombom in Amerika gedurende die Tweede Wêreld-oorlog was. Deur die toepassing van hierdie tegniek op meer opbouende dade, soos die voorkoming en genesing van siektes, kan daar met vertroue na groot vooruitgang uitgesien word.

Die *Verslag* beklemtoon 'n belangrike aspek van chemotherapie met betrekking tot tering—een wat ook van belang in ander aanwendings van die antibiotika is—en dit is die feit dat wanneer 'n pasiënt met een van die antibiotika behandel word die tuberkule-bacilli in sy sisteem 'n weerstand teen die antibiotiese middel mag ontwikkel. Dit mag 'n ongunstige uitwerking hê wanneer 'n pasiënt op 'n later datum met dieselfde antibiotiese

EDITORIAL

TUBERCULOSIS AND CHEMOTHERAPY

The *Second Report* of the Tuberculosis Chemotherapy Trials Committee of the Medical Research Council, of which we publish a summary this week, is of interest to South African Medicine from several points of view. It turns our attention to the progress that has been made in the treatment of tuberculosis during our generation. Fifty years ago and less, tuberculosis of the lungs was a threat of early death, which few who developed the disease escaped. It stood pre-eminent among the causes of mortality, more particularly of adults, and its conquest was one of the hopes to which the thoughts of humanity turned. That much has been achieved since that time, in the fields both of prevention and treatment, is shown by the tuberculosis statistics of many countries. Three milestones in therapeutic practice have been: (1) the recognition of the importance of nutrition, absolute rest followed by controlled exercise and general hygiene; (2) the application first of the simpler collapse therapy and then of the major surgery of the lungs; and (3) the discovery of effective antibiotic and other chemotherapeutic measures. The use of these new drugs, though still in the experimental stage, has already produced good results, and they give promise of further advance in the future. It was to help in this advance that the Medical Research Council set up their Tuberculosis Therapy Trials Committee.

The reports of this British Committee, whose work is still actively continuing, present an excellent example of nationally-controlled research into a specific problem, making use of the best available resources in the country, both material and personal. It is a technique of which the biggest example was the production in America of the first atomic bomb during the last war. Great advances may confidently be expected from its application to more useful fields of endeavour such as the prevention and cure of disease.

An important aspect of chemotherapy in tuberculosis that the *Report* brings into prominence—one that is important also in other applications of antibiotics—is the fact that when a patient is treated by one of these drugs the tubercle bacilli with which he is infected may develop a resistance to that drug. This may be an unfavourable

middel behandel moet word, en dit stel verontrustende moontlikhede in die vooruitsig in geval ander persone deur die pasiënt met hierdie weerstandbiedende bacilli besmet word.

Die *Verslag* meld dat met die toediening van *streptomycin, isoniazid* en *PAS* oor 'n proeftydperk van 3 maande toe twee van hierdie midde'e gelyktydig gebruik is, die geneigdheid van die pasiënt se bacilli om weerstand teen enige van die twee op te bou baie geringer was as wanneer hul afsonderlik gebruik is; dog as die pasiënt alreeds weerstand teen een van die twee middels bied die bacilli blykbaar net so geneig tot weerstand is as wanneer die twee middels afsonderlik toegedien word.

Op die huidige stadium van navorsing blyk dit belangrik dat antibiotiese middels nie afsonderlik nie maar wel in sodanige verbindings en dosisse toegedien moet word as wat die ontwikkeling van basilweerstand sover moontlik sal vermy. Om dit te verwesenlik word dit beklemtoon dat die basilweerstand teen 'n middel getoets moet word voordat die behandeling begin en weer wanneer dit beëindig. Dit sal aansienlike voorsiening van laboratoriumfasiliteit by teringhospitale vereis.

Sover dit sy b'anke bevolking betref is Suid-Afrika se teringprobleem dieselfde as dié waaraan alle lande van die Westerse beskawing die hoof moet bied. Die teringsyfer van die nie-blankes—wat vier-vyfdes van ons bevolking saamstel—bereik egter 'n baie hoër peil as dié van die blankes; gevolglik het ons land met 'n teringprobleem te kampe wat, in vergelyking met sy bronne, oneindig groter is as dié van enige ander Westerse land. Dit geld beide voorkoming en behandeling. Daar is 'n tekort aan hospitaalbeddens vir teringgevalle. Die nuwe metodes van behandeling kan en word tot 'n groot mate in ons hospitale toegepas maar by gebrek aan hospitale is hierdie metodes nie vir die meerderheid van teringgevalle—en in die besonder onder die nie-blanke rasse—beskikbaar nie.

factor if the patient needs to be treated with the same drug later on, and it suggests disconcerting possibilities in the event of other persons becoming infected with the drug-fast bacilli from the patient. The *Report* records that, over the 3-months' trial period with streptomycin, isoniazid and PAS, if 2 of these drugs are given simultaneously the tendency of the patient's bacilli to become resistant to either is much less than if they are given separately; but that if the patient is already resistant to one of the 2 drugs given, the bacilli appear to be as liable to become resistant to the other drug as if it were given by itself. At this stage of the research it appears that it is important that the drugs should not be administered singly but in such combinations and doses as will avoid as far as possible the development of bacillary resistance.

To make this possible it is urged that the drug-resistance of the bacilli in the case should be tested before treatment with the drug is begun and again when the treatment is discontinued. This will involve a considerable provision of laboratory facilities for hospitals where pulmonary tuberculosis is treated.

So far as its white population is concerned tuberculosis presents problems in South Africa similar to those which have to be faced in all countries of Western civilization. But the tuberculosis rates in the non-Europeans, who constitute four-fifths of our population, are many times as great as in the European; and consequently this country is faced with a tuberculosis problem enormously greater in proportion to its resources than any other country of the Western world. This applies to prevention as well as treatment. There are far fewer hospital beds for tuberculosis than are needed. In the hospitals that we have, the modern methods of treatment can be applied—indeed to a great extent they are being applied—but without more hospitals these methods will not be available for the majority of cases of tuberculosis, especially among the non-European races.

LATE MANIFESTATIONS OF DIABETES MELLITUS*

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It is now 21 years since I joined the Diabetic Clinic of the Johannesburg Hospital (a clinic for European patients founded a short while before by the President of the Medical Association of South Africa, Dr. L. I. Braun) and during the years which have passed it has been pleasant to see our diabetics continuing their normal lives and living to ripe old ages. The fear of early death, of death in coma, has gradually receded and thanks to better house control of the diabetes by general practitioners, the diabetic patient to-day remains a useful citizen, and is even being accepted as a fair risk by life insurance companies. However, as the diabetic becomes older, as his diabetic life becomes longer, certain signs and symptoms become evident which tend to interfere with his normal life; symptoms which, if sufficiently severe, may ultimately lead to his becoming a diabetic cripple. The common occurrence of these conditions, which mainly affect the vascular tree, may be gauged from the fact that a Quarter Century Victory Medal is being awarded by the Advisory Committee of the Diabetic Fund of the Boston Safe Deposit and Trust Company to those who, having had diabetes for 25 years, can be shown to have a sound body as shown by routine physical examination, a urine free from albumin, eyes without diabetic complications and arteries free from calcification. In September 1951 Joslin was able to report only 23 recipients of this medal and although he states that he expects that the number will multiply rapidly, the number of patients without one or other of these late features of diabetes is so few that I feel that for

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the present these conditions may be looked upon as the late manifestations of diabetes rather than complications, the term usually given to them.

EYE CHANGES

A group of 231 diabetics—62 males and 169 females—was investigated for eye changes. None of the early cases of alteration in refraction were considered, nor were the very early micro-aneurysms of the retinal vessels taken into account. Retinitis was stated to exist only where frank haemorrhages were seen on the retina either alone or accompanied by white exudates. The patients were a middle-aged group of diabetics, the diabetes having commenced (according to history and symptomatology) at an average age of 50 years in both males and females. Of these 231 cases, no less than 90 (39%) showed serious eye changes. An analysis of this group revealed that 43 (47.7%) had retinitis, 27 (30%) had cataract and a further 13 cases (14.4%) had cataract plus retinitis. A full analysis of these 90 cases, sub-divided into 5-year groups according to the duration of the diabetes is given in Table I.

TABLE 1: ANALYSIS OF DISEASES OF THE EYE FOUND IN 90 OUT OF 231 DIABETICS

Diagnosis	*Sex*	*Duration of Diabetes in Years* 0–5	6–10	11–15	16–20	21–25	26–30
Retinitis.. ..	*Male*	3	4	1	1	0	1
	Female	8	9	7	8	1	0
Cataract.. ..	*Male*	3	0	0	0	0	0
	Female	9	3	4	7	1	0
Cataract and Retinitis	*Male*	0	0	1	0	0	0
	Female	2	4	3	2	1	0
Retinitis Proliferans	*Male*	0	0	0	0	0	0
	Female	1	0	0	0	0	0
Retinitis and Optic Neuritis	*Male*	0	0	0	0	0	0
	Female	0	1	0	0	0	0
Cataract and Optic Atrophy	*Male*	0	0	0	0	0	0
	Female	1	0	0	0	0	0
Optic Atrophy	*Male*	1	0	0	0	0	0
	Female	0	0	0	0	0	0
Choroiditis	*Male*	0	0	0	1	0	0
	Female	1	0	0	0	0	0
Vitreous Opacities	*Male*	0	0	0	0	0	0
	Female	1	0	0	0	0	0

The high incidence of retinopathy is shown by the fact that actually 58 of our cases suffered from this condition, when we add together those with retinitis alone plus those with retinitis and cataract plus those with retinitis proliferans. If we analyse these figures still further, 14 out of 106 cases (13%) with diabetes from 0–5 years had retinopathy; 18 out of 64 cases (28%) with diabetes from 6–10 years had retinopathy; 12 out of 36 cases (33⅓%) with diabetes from 11–15 years had retinopathy; 11 out of 15 cases (73%) with diabetes from 16–20 years had retinopathy (Table 2).

TABLE 2: INCIDENCE OF RETINITIS

Duration of diabetes in years ..	0–5	6–10	11–15	16–20
Number of cases examined.. ..	106	64	36	15
Retinitis found in	14	18	12	11
Percentage incidence	13%	28%	33⅓%	73%

Thus the evidence points to the fact that the longer the duration of the diabetes, the greater is the incidence of retinopathy.

The high incidence of retinopathy in diabetes is stressed by other authors. Waite and Beetham (1935) stating that 59% of their patients with diabetes of 15 years and over had retinal haemorrhage; Wagener (1946) that 60% of more than 10 years standing showed a similar condition, and Whittington and Lawrence (1951) that 75% of those with diabetes for 20 or more years showed retinal changes. Ballantyne (1946) found 31.7% of cases with retinopathy among 561 diabetics of all ages, and Wagener (1945) gives 30.6% as his figure for diabetic retinopathy among patients of all ages. The latter author also stresses the point that duration of the diabetes is probably the dominant factor in the occurrence of retinopathy and finds that in his own figures 10.7% of those who have diabetes of less than 1 year's duration had retinopathy, while 22% of patients with diabetes of 1–10 years, 65% of those with diabetes of 11–15 years, 67% of those with diabetes for 15–20 years, and 73% of those with diabetes of more than 20 years' duration had retinopathy. Pointing to the fact that in occasional cases of retinopathy the only evidence of diabetes may be a definitely positive glucose tolerance curve, he has suggested (Wagener 1945) that 'a primary disturbance of carbohydrate metabolism is requisite to the initiation of the retinopathy, but that this disturbance need not be sufficiently severe to cause permanent elevation of the blood sugar levels, and that some secondary defect of metabolism may be the actual cause of the retinopathy'.

So far as the incidence of cataract is concerned, 41 (17.7%) of my cases showed this condition. Whether cataract is more common in diabetics than among the ordinary population is a moot point. Waite and Beetham (1935) found lens opacities among 50% of their diabetics, but also among 57% of non-diabetics over 20 years of age. Anthonisen (1936) found that, in the 25–34 years age group, the incidence of cataract was 202 times greater among diabetics than among the population as a whole, and that it was still 15 times greater in the 65–74 years group.

It is possible that the rapid alterations in the composition of the aqueous humor as a result of marked variations in the blood sugar and by hyperglycaemia may be a factor in the causation of cataract in the diabetic. The lens is avascular and obtains its nourishment from the aqueous. It is to be expected, therefore, that the lens will be affected by changes in this fluid. Salit (1944) has calculated the average glucose content of 6 diabetic cataracts as being 103.1 mg. per 100 gm. whereas it is known that the average glucose content of the lens during

the fourth and fifth decades is 40.0 mg. per 100 gm. decreasing to 36.2 mg. per 100 gm. in the eighth decade. The possibility that the hyperglycaemia is a factor in the causation of lens opacities cannot therefore be discounted.

VASCULAR CHANGES IN DIABETES MELLITUS

Warren (1938) describes the changes occurring in the blood vessels in diabetes mellitus as of 3 main types:

(a) Arteriosclerosis of the intimal type, where there is local thickening and hyaline change of the intima with lipoid infiltration, the presence of cholesterol crystals or the presence of calcified deposits.

(b) A medial sclerosis with calcification or hyaline degeneration of the smooth muscle cells of the media.

(c) Hyaline degeneration of the small arterioles.

In 484 diabetic autopsises, 143 deaths (30%) were due to arteriosclerosis or to 'tissue changes immediately secondary to that lesion'.

Moschcowitz (1951) feels that arteriosclerosis as defined under (a) is the characteristic arterial lesion of diabetes mellitus. In an out-patients clinic it is only possible to assess alterations in the blood vessels in those cases where there are evident naked-eye changes such as those found in the retina, or where some other aids, such as X-rays, can be introduced. The actual feel of the vessels must be considered so inaccurate as to prove useless in any assessment whether thickening of the vessels is present. Thus, in 188 cases X-ray of the peripheral arteries was undertaken. Of this total 88 cases were found to have calcification in these vessels and 100 cases had no calcification. The youngest patient showing calcification was aged 24 years and the oldest 76 years. The average age of those with calcification was 62.2 years, and of those without calcification 52.1 years. The average duration of the diabetes of the group with calcification was 10.4 years, and of that without calcification 6.2 years (Table 3).

TABLE 3: X-RAY FOR CALCIFICATION OF VESSELS

	Calcification Present	*Calcification Absent*
Total number of cases	88	100
Males	23	26
Females	65	74
Average age of cases	62·2 years	52·1 years
Average duration of diabetes	10·4 years	6·2 years
Average blood pressure	170/94	155/87
Average blood cholesterol	221 mg. %	228 mg. %

This would suggest that the older the patient and the longer the duration of the diabetes, the more likely was calcification to develop in the peripheral vessels. However, it must be noted that calcification had occurred in one case as early as 3 months after the symptoms of diabetes first appeared. Again, the 24-year-old patient had been diabetic for 20 years when the calcification was first seen. Many authors have stressed the importance of hypercholesterolaemia and hyperlipaemia in the causation of vascular changes in diabetes (Hunt, 1929; Leary, 1934; Warren, 1938; Rabinowitch, 1938; Root, 1946).

In our series, however, the average blood cholesterol was normal, the average in those with calcification being 221 mg. per 100 c.c. and in those without calcification 228 mg. per 100 c.c. The lowest blood cholesteral found in the group with calcification was 130 mg. per 100 c.c. and the highest found in the 'no-calcification' group was 500 mg. per 100 c.c.

In the latter case the diabetes had only been present for 1 year. In order to show that neither the duration of the diabetes nor the height of the blood cholesterol gives the complete answer to the reason for the onset of calcification, it may be mentioned that a female aged 66 years with diabetes for only one year and a blood cholesterol reading of 225 mg. per 100 c.c. has already got calcification. That this condition of calcification of the vessels is not limited to the older age group is evident from the fact that White (1932) found calcification in the leg arteries of 19 out of 104 diabetic children. Root *et al.* (1950) found this calcification in 135 out of 234 cases of diabetes which commenced between the ages of 15 and 30 years, the diabetes having lasted up to 29 years. It is of significance to find that the longer the diabetes, the more marked the calcification, and the higher the percentage of cases showing it.

Peripheral vascular disease associated with atheromatous changes in the vessels is a common finding in our diabetics; 62 of a total of 339 cases examined showed evidence of this. They are made up as shown in Table 4:

TABLE 4: PERIPHERAL VASCULAR DISEASE IN 339 CASES OF DIABETES

Evidence of Disease	*Male*	*Female*
Gangrene of leg	5	14
Intermittent claudication	7	5
Absent pulses	9	5
Ulceration of toes and feet	3	14
Total	24	38
Average age	64 years	61·5 years
Average duration of diabetes	8·7 years	9 years

Dry and Hines (1941) found arterial insufficiency in the legs of diabetics to be 7 times as frequent as in non-diabetics. In addition they found that in the case of female diabetics, arteriosclerosis obliterans was 80 times more frequent than in non-diabetics.

Barnum (1952) has pointed out that X-ray examination of peripheral vessels can differentiate between calcification in atherosclerosis and medial calcification. In the former the calcification has a patchy plaque-like appearance which may be very dense, and in the latter a diffuse trachea-like density is seen. The importance of differentiation lies in the fact that in those with medial calcification only, no peripheral vascular symptoms may occur as the sclerosis does not encroach on the vessel lumen. In the case of atherosclerosis, these symptoms are likely to occur as shown in Table 4. The difference

between the 2 types is well illustrated in the X-ray shown in Figs. 1 and 2.

As in the case of the general population, so in the case of the diabetic, arteriosclerotic heart disease has become a common cause of death; 63 of the same 339 cases in my series have shown cardiac complications. The average age of these 63 cases was 60.6 years. The heart was enlarged in 21 cases, coronary thrombosis had been present in 13 others, congestive cardiac failure in 9 others. Abnormal electro-cardiographic findings associated with anginal symptoms were found in 15 cases, 3 cases showed triple rhythm, and 2 cases had attacks of paroxysmal auricular fibrillation (Table 5).

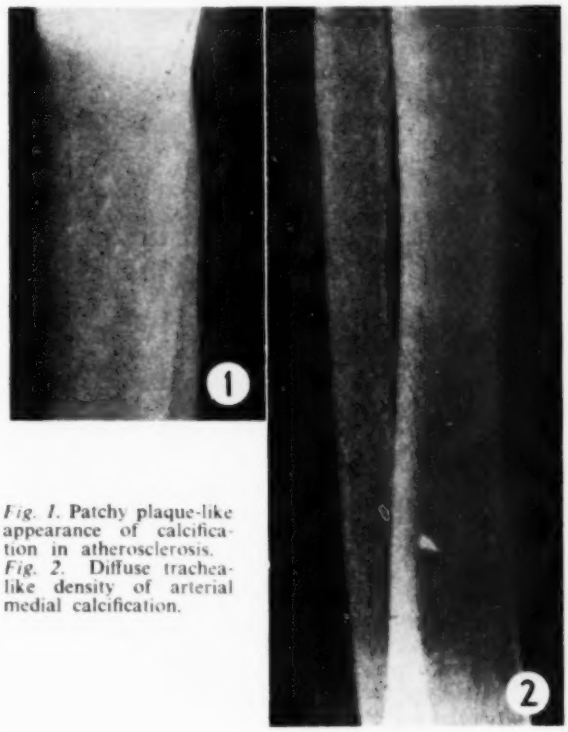

Fig. 1. Patchy plaque-like appearance of calcification in atherosclerosis.
Fig. 2. Diffuse trachea-like density of arterial medial calcification.

TABLE 5: CARDIAC COMPLICATIONS IN DIABETES

Total number of cases analysed	339
Total number with cardiac complications	63 cases
Enlarged heart	21 cases
Coronary thrombosis	13 cases
Angina pectoris with abnormal E.C.G. findings	15 cases
Congestive cardiac failure	9 cases
Triple rhythm	3 cases
Paroxysmal auricular fibrillation	2 cases
Average age of cases showing cardiac complications	60·6 years

In no fewer than 54 of these cases was hypertension present. Joslin (1946) states that coronary disease is more than twice as frequent among diabetics with hypertension than in those with normal blood pressure and in my own series of cases this statement is fully borne out, only 9 of the 63 cases having no hypertension.

In the total series of 339 cases, 134 had developed hypertension after an average duration of the diabetes of 8.9 years. The average age of the hypertension cases was 52.7 years, the ages varying from 27 to 82 years. Males numbered 27 and females 107. Criteria for hypertension in this series have been taken as a systolic pressure of 160 mm. Hg or over, or a diastolic pressure of over 90 mm. Hg. In a number of cases it was possible to establish that the blood pressure was normal when the diabetes first appeared, and there has been a tendency for it to increase over the course of the years. Moschcowitz (1951) would account for the hypertension in many cases by stating that older individuals with prolonged essential hypertension are potential diabetics, and that hyperplastic arteriosclerosis precedes but does not follow the diabetes. While this may be the case in occasional cases, it cannot be considered the general rule. Root *et al.* (1950) working with a group of young diabetics have found that 66 out of 192 patients (34%) developed hypertension after the diabetes had been in existence for 10–29 years.

Suffice it to say, then, hypertension is a common accompaniment of diabetes, especially when it is associated with atherosclerotic and cardiac manifestations.

With further reference to the question of the relation of hypercholesterolaemia to vascular changes, it may be mentioned that Lehnherr (1933) found the lipid and cholesterol content of the aorta higher in diabetics than in non-diabetics, the cholesterol content being 8.07 gm.% in the diabetic as against 4.8 gm.% in the non-diabetic. However, in recent years other theories have been put forward to explain the vascular changes occurring both in the diabetic and non-diabetic. Hueper (1942) has suggested that macromolecular compounds (of which cholesterol is one) circulating with the plasma and interfering with the oxygenation and nutrition of the vascular walls by the formation of films covering those vessel walls, give rise to atheromatous and arteriosclerotic lesions. The importance of the cholesterol-phospholipid ratio has been stressed by some authors (Kellner *et al.*, 1951; Gertler *et al.*, 1950, 1951) as being one of the factors concerned in atherosclerosis. Barr, Russ and Eder (1951) have suggested that in atherosclerosis more beta-lipoprotein is found in the serum compared with the amount of alpha-lipoprotein than is found in normal subjects.

Gofman and his associates (1950, 1952) have studied the lipo-proteins in human serum with an ultra-centrifugal flotation technique and have classified groups of molecules in serum according to the rate at which they migrate in terms of Svedberg flotation (Sf) units. They have found a strong correlation between the concentration of Sf 12–20 molecules and atherosclerosis, and have found that the concentration of these molecules is higher in diabetic than in non-diabetic subjects. In addition, if the fat and cholesterol in the diet are restricted, Sf 12–20 levels are definitely depressed. He and his associates believe that the correlation of Sf 12–20 levels with atherosclerosis is much greater than the correlation of serum cholesterol levels with this condition.

Thus, evidence is continually accumulating that 'an error of lipid metabolism is closely related to the process of atherogenesis in man and experimental animals' (Boas and Adlersberg, 1952).

ALBUMINURIA

Another sign in the later stages of diabetes is albuminuria, and this was constantly found in 41 of the 339 cases analysed (12.9%). Kimmelstiel and Porter (1948) have reported an incidence of 17% of nephritis in all cases of diabetes.

In my own series, the average age of those developing albuminuria was 59.1 years, and the average duration of the diabetes was 11.1 years. The blood pressure was raised in 32 of the 41 cases but was normal in 9 of them. Hypertension was therefore present in 75% of these cases of albuminuria. Rifkin *et al.* (1948) found hypertension in 95% of their cases of nephritis, but Root *et al.* (1950) found it in 36 out of 51 cases of nephritis, i.e. 71%. In common with the latter authors I find that in some cases the hypertension only comes on after the nephritis has been well established. As will be noted, however, 102 of my cases of hypertension with diabetes had no albuminuria.

It is not my intention to discuss the question of the renal lesion with which the albuminuria is associated. Whether associated with nephrosclerosis or with intercapillary glomerulo-sclerosis (Kimmelstiel and Wilson, 1936), the main points to be made here are that the lesion usually makes its appearance in the later stages of diabetes, and that in the majority of cases it is preceded by hypertension, while, in a minority, hypertension follows. Hyaline and granular casts were to be seen in the urines of my affected patients, and the blood urea showed a slight rise varying from 43 mg. to 85 mg. per 100 c.c. in those cases where the test was undertaken.

Gilliland (1951) stresses the fact that where there is actually intercapillary glomerulo-sclerosis of the kidney, there will be found a clinical syndrome consisting of diabetes, albuminuria, hypertension with heart failure, diabetic retinopathy or obscuring cataract, peripheral neuropathy and oedema, at least of the dependant parts.

Most of my own cases of albuminuria with diabetes showed hypertension, retinopathy or cataract, and sometimes angina of effort.

THICKENING OF THE PALMAR FASCIA

In recent years I have been struck by the fact that many of my diabetics present themselves with a curious thickening of the palmar fascia which I am unable to differentiate from Dupuytren's contracture. Four stages of the condition can be identified:

1. A small rounded subcutaneous nodule in the palm of the hand, very often in the region of the distal end of the 4th metacarpal bone.
2. A longitudinal thickening along the length of one or more of the slips of the palmar fascia passing to the fingers.
3. A further extension of the above with adhesion to and puckering of the over-lying skin.
4. Associated with the above, there is extension of the process to the fingers, and as the thickened cords contract, so flexion of the fingers occurs, particularly at the metacarpo-phalangeal joints. The condition occurs mainly on the ulnar side of the hand, in the region of the heads of the 4th and 5th metacarpal bones (Figs. 3–6).

Dupuytren's contracture in association with diabetes has been described by a number of authors. Greenwood (1927) stated that whereas the condition occurred in 0.016% of patients attending the out-patient department of the Massachusetts General Hospital, it was found in 1.6% of diabetics.

Davis and Finesilver (1932) found 6 cases among 200 diabetics, whereas in a comparable age group of 641 other persons, they only found 7 cases.

Nichols (1899) found 2 cases of glycosuria in 50 cases of Dupuytren's contracture.

Teschemacher (1904) found 33 cases among 213 diabetics, the ages ranging from 50 to 70 years of age.

In my own series, however, 120 cases of thickening of the palmar fascia has been found among 381 diabetics, (31.2%). Of the total number of diabetics, 267 were females and 114 males. The cases of thickening of the palmar fascia consisted of 90 females and 30 males. The average age of the female cases was 61.4 years, and that of the males 62.4 years. The youngest case occurred at the age of 25 years, and the oldest at 79 years. The most common decade in which the condition was detected was that between 60 and 69 years.

In a comparable series of non-diabetics the percentage incidence of this same condition was 6%. Thus, the proportion of cases among diabetics far exceeds that found in the general group.

The 261 diabetics who showed no thickening of the palmar fascia were divided as between 177 females and 87 males. Their average ages were less than were those which showed the condition. Thus the average age of the females was 57.6 years, and that of the males was 52.1 years.

Again, the average duration of the diabetes in the thickened palmar fascia group was 8.3 years in the case of the females and 9.1 years in the case of the males. In the group without this finding the average duration of the diabetes was 7.1 years in the case of the females and 6.1 years in the case of the males (Table 6).

TABLE 6: THICKENED PALMAR FASCIA IN DIABETES MELLITUS

Number of cases examined 381
Number of cases with thickened palmar fascia 120

	Sex	*Total No. of Cases*	*Average Age (years)*	*Duration of Diabetes*
Thickened palmar fascia present in 120 cases	*Male*	30	62·4	9·1 years
	Female	90	61·4	8·3 years
Thickened palmar fascia absent in 261 cases	*Male*	84	52·1	6·1 years
	Female	177	57·6	7·1 years

Both hands were affected in 49 cases, the right hand only in 39 cases and the left hand only in 31 cases.

On separating the cases according to the stage of the condition found in the more advanced hand, it was found that Stage 1 was present in 39 cases, Stage 2 in 66 cases, Stage 3 in 10 cases and Stage 4 in 5 cases.

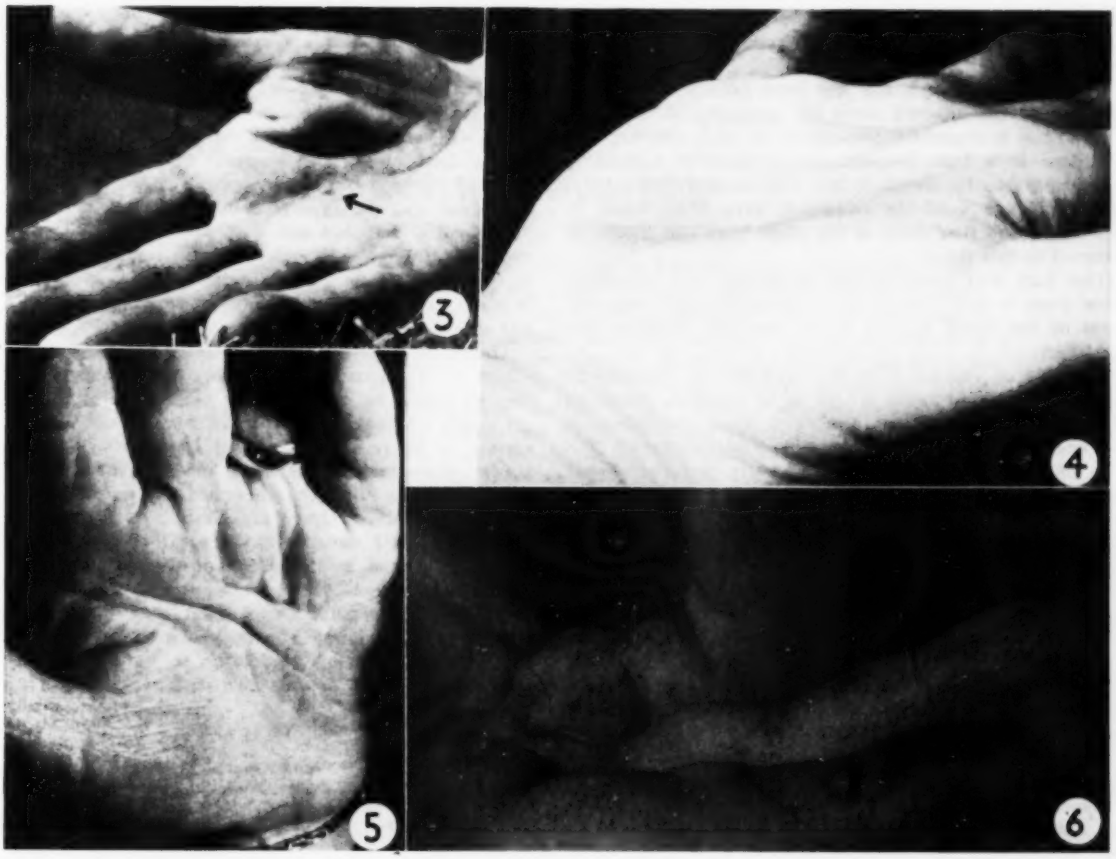

Fig. 3. Thickened palmar fascia (Stage 1).
Fig. 4. Thickened palmar fascia (Stage 2) shown between 4th and 5th metacarpal bones.
Fig. 5. Thickened palmar fascia (Stage 3).
Fig. 6. Thickened palmar fascia (Stage 4).

The average blood cholesterol in this group was 246 mg. per 100 c.c. but the figures varied between 113 mg. per 100 c.c. and 500 mg. per 100 c.c. in individual cases. The average blood pressure was 169/94 mm. Hg.

The age grouping of the cases would suggest that age is a big factor in the etiology of the condition (Table 7).

TABLE 7: AGES OF THICKENED PALMAR FASCIA CASES

Age Group	*Females*	*Males*	*Totals*
Years	—	—	—
70—79	16	7	23
60—69	40	14	54
50—59	27	4	31
40—49	5	5	10
30—39	1	—	1
20—29	1	—	1
	90	30	120

Thus at the same ages when the vascular changes are most prominent in diabetes the incidence of thickened palmar fascia is also highest. In 46 of the cases of diabetes with calcification of vessels in which examination for thickened palmar fascia was undertaken, 28 cases were found to have this condition (61%). Whereas in 62 cases without calcification of vessels only 22 (35.5%) had thickened palmar fascia. This investigation is being continued, but again the association of vascular changes with thickened palmar fascia is highlighted.

The suggestion is, therefore, made that the alteration in vascular supply is one of the principal etiological factors in the causation of this condition.

On following these cases for the past 3 years, one has noted that the condition has tended to improve in some of them, and in 7 cases the condition has disappeared spontaneously. In all of these the disappearance has coincided with better diabetic control, but not necessarily with absolute control; 22 cases were treated with vitamin E therapy. In 3 cases the condition disappeared entirely, and in 7 cases there was slight improvement. The stages of the condition in which total disappearance occurred were Stage 2 in 2 cases, and Stage 1 in 1 case. Six cases were treated with local injections of Hydro-cortisone but

without effect. Three cases were treated with acetylcholine ionization. In all three marked improvement occurred.

Up to the present it has not been possible to remove portions of the affected areas for pathological investigation and it is therefore impossible to state whether this condition is a true Dupuytren's contracture. Clinically, they appear to be identical, but it is curious that only 5 cases of Stage 4 of the condition have been found in this series, and that most of the cases have not tended to progress to this stage.

The fact that acetylcholine ionization has improved some cases is also interesting as it suggests that improvement of the blood supply to the part will improve this condition.

The role of vitamin E in the treatment of Dupuytren's contracture and fibrositis is still to be clarified. Steinberg (1946) has suggested that abnormal tissue utilization of the vitamin occurs in this condition and has shown that it is of value in the treatment of early and moderately advanced cases.

What has been of particular interest is the fact that 7 cases have recovered with better control of the diabetes. The series is too small to draw conclusions, but it does seem possible that the diabetic control may be a factor in the disappearance of the thickened fascia. Can it be that improvement of diabetic control means better metabolism, less disturbance of the macro-molecular equilibrium of the plasma, less interference with the oxygenation and nutrition of the vessel walls, and thus a better blood supply to the affected parts?

I have only been able to find one case report in the literature of Dupuytren's contracture cured as a result of treatment of the diabetes, that of Schlosser (1932), and in this case the condition disappeared within 3 months of commencing treatment of the diabetes.

It must be pointed out, however, that better control in other of my cases has resulted in no change in the condition. Joslin (1951) has called attention to the fact that the Victory Medal cases were all those whose diabetes had been kept under good control. Wilson *et al.* (1951) have also stressed the necessity for good control of the diabetes in order to prevent degenerative vascular lesions.

Atherosclerosis is now thought to be a reversible condition (Leary, 1944; Duff, 1935, 1936; Elliott, 1952) and, as has already been mentioned, an error of lipid metabolism would appear to be closely related to the process of atherogenesis.

A certain amount of evidence has been brought forward to show that obese and overweight individuals are more prone to atherosclerosis and its consequences than are normal persons (Dublin, 1930; French and Dock, 1944; Wilens, 1947*a*).

It has also been suggested that thin under-nourished persons have less atherosclerosis than might be expected (Wilens, 1947*b*). Keys *et al.* (1950) have stated that the cholesterol content of the blood is not altered by keeping to ordinary diets poor in fat or cholesterol, or containing large amounts of these substances. Only by taking a diet completely free of cholesterol and fat will there be a reduction in the blood cholesterol.

On the other hand, Gofman *et al.* (1950) have shown that a low-fat, low-cholesterol diet can reduce the number of abnormal giant lipoprotein molecules where these happen to be present in the serum, and Sf 12–20 levels in the blood are definitely depressed. Lately, De Zoysa (1951), has pointed to the fact that the fat content of the diets of the Ceylonese is very much lower than those of the diet of Western people. Their diabetics are not obese, and the average cholesterol content of a series of untreated diabetics was well within normal limits (217 mg. per 100 c.c.). Peripheral vascular occlusive disease is much less common (in only 5% of cases) than in Western countries. In addition, hypertension was also less noticeable (found in 9.1% cases).

Thus it is suggested that in a condition such as diabetes where atherosclerosis is common, the amount of fat in the diet should be limited.

Certain of the late manifestations of diabetes would appear to be reversible. Retinal haemorrhages may disappear, thickened palmar fascia may do likewise, diabetic neuritis can usually be controlled. Atherosclerosis may also be reversible. Up to the present, good diabetic control, by which I mean a blood sugar level kept as near to normal limits as possible (not an easy task by any means), and a diet low in fat, seem our only weapons of combating these conditions. That they are insufficient there can be no doubt, but until such time as more effective weapons, possibly endocrine in nature, are vouchsafed us, we must do our best with what we have.

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RADIOLOGICAL CASE BOOK

XXXVI. PHYSOSALPINX

JAMES T. LOUW, M.B., CH.M., F.R.C.O.G.
Professor of Obstetrics and Gynaecology, University of Cape Town

Mrs. C. M., a 29-year-old, primigravida, married for 7 years, mildly toxaemic, was admitted to hospital from an ante-natal clinic, when she was 34 weeks pregnant.

Examination revealed a hydrocephalic monster presenting by its breech (Fig. 1).

After a few days of bed rest she refused treatment and left hospital.

When 42 weeks pregnant she was admitted with a temperature of 100°F, and a pulse rate of 120 per minute; blood pressure, 110/60 mm. Hg, and mild albuminuria

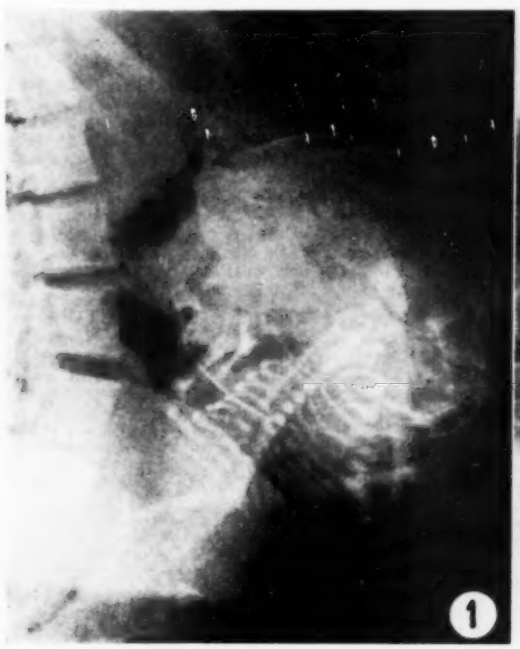

Fig. 1. Hydrocephalic monster presenting by its breech.

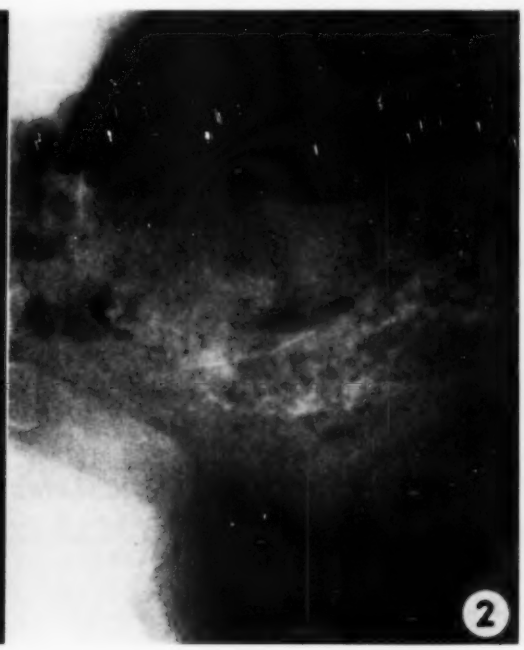

Fig. 2. Fluid level and Spalding's sign.

(catheter specimen—no pus cells microscopically). She stated that she had experienced generalized abdominal pains of cramp-like nature for 12 hours and had a slight show.

On examination a distended abdomen, resonant to percussion, was found. Radiological examination revealed a large fluid level in the space occupied by the foetus (Fig. 2).

Vaginal examination, confirmed by hystero-salpingogram (Fig. 3), revealed an extra-uterine pregnancy.

At operation the pregnancy was found completely within the right tube, which was grossly distended by foul-smelling gas, foetus, placenta and membranes.

The albumin disappeared from her urine and the patient made an uneventful recovery following 3 stormy post-operative days.

This is, as far as can be ascertained, the first case of physosalpinx, together with tubal pregnancy at term, reported in the world literature.

Fig. 3. Hystero-salpingogram showing uterus over to the right, blocked left tube and no radio-opaque material in the right tube.

PASSING EVENTS

Ex-Service Medical Officers' Group

The Ex-Service Medical Officers' Group of the Association, having fulfilled the functions for which it was formed, has brought its existence to an end. At a meeting of the Executive of the Group held early in March the outstanding funds in hand were disposed of. The greater portion was donated to the Benevolent Fund of the Medical Association, donations also being made to the British Empire Service League and the National War Memorial Health Foundation. A cheque for £67 7s. 7d. has accordingly been received by the Benevolent Fund.

Honorary Degrees

Members of the Association will be interested to know that to mark the holding of a congress of the S.A. Dental Association in Johannesburg the University of the Witwatersrand has conferred the honorary degree of Doctor of Laws on 2 members of the dental profession in South Africa, namely Dr. L. C. Abrahams of Cape Town and Dr. G. Friel of Johannesburg.

Presse Medicale Medico-Surgical Cinema Competition

The second competition organized by *La Presse Medicale* for medico-surgical films, came to an end on 24 March 1953, with a public meeting in the largest amphitheatre of the Faculty of Medicine, Paris, where the Jury had to decide upon the value of the 7 competitory films which had been selected after 2 elimination meetings. Over 30 candidates were present, of whom 6 were foreign, for the initial sitting.

In consideration of the value of the competing films the Jury had to divide the award of 100,000 Fr. as had been foreseen, as follows:

One First Prize (50,000 Fr.) to the film 'Cytophysiologie des phagocytes' by J. Frederic et R. Robineaux (Paris).

Two Second Prizes (25,000 Fr.) to the film 'Résection du maxillaire supérieur', by M. Dargent (Lyon), and the film 'Laryngectomie reconstitutive', by Hofmann-Sageuz (Paris).

In addition, the following have obtained a 10,000 Fr. award: 'La lèpre', by Laheyssonnie (Corps de Santé colonial); 'Vertiges et lentilles prismatiques', by Baron (Paris) and Fowler (New York); 'Traitement chirurgical des kystes hydatiques du poumon par la kystectomie', by J. Demirieau (Tunis); 'Resection of the Oesophagus', by Rice-Edwards (Newport Mon.).

Empire Medical Advisory Bureau

South African medical practitioners who are thinking of visiting the United Kingdom should get into touch with Dr. H. A. Sandiford, Medical Director of the Bureau, at B.M.A. House, Tavistock Square, London, W.C.1, so that all the facilities of the Bureau will be placed at their disposal.

Medical practitioners will find the Bureau helpful in arranging accommodation as well as post-graduate courses of study.

The Cape Town Paediatric Group

The next meeting of the Group will be held on Friday 5 June at 8.15 p.m. at Groote Schuur Hospital in the Large E.4 Lecture Theatre.

Dr. A. Gonski will discuss the present neurosurgical trends in hydrocephalus, and also certain neurosurgical cases seen in the paediatric department of Groote Schuur Hospital, Cape Town, recently.

A cordial invitation is extended to interested practitioners.

BENEVOLENT FUND

The following contributions to the Benevolent Fund during March and April, 1953, are gratefully acknowledged:

Votive Card: In Memory of:

Dr. N. A. Stutterheim *by* Dr. Max Segal.
Dr. W. W. McCowat *by* Dr. W. G. McDavid, Dr. A. J. Orenstein.
Mrs. Elaine Raw *by* Dr. Frank Walt.
Prof. W. Campbell *by* Dr. Vernon Brink, Dr. F. S. Charnock, Dr. A. W. S. Sichel, Dr. P. A. Don, Dr. and Mrs. J. S. du Toit, Dr. Ethel Barrow.
Col. Harvey Knapp *by* Dr. A. J. Orenstein.
Mrs. Syd. Garrett *by* Dr. E. G. van Hoogstraten.
Dr. Z. J. de Beer *by* Dr. and Mrs. A. H. Tonkin, Dr. and Mrs. A. W. S. Sichel, Dr.

F. Sutton Charnock, Dr. L. Blumburg, Dr. and Mrs. F. W. F. Purcell, Dr. A. J. Ballantine, Mr. J. A. Currie, Dr. and Mrs. J. S. du Toit, Violet E. Dreyer, Dr. E. G. van Hoogstraten, Dr. A. L. Burman, Dr. Vernon Brink, Dr. A. Marais Moll, Dr. J. C. Gie, The Medical Staff of Valkenberg Hospital, Dr. D. P. Marais, Dr. T. Lindsay Sandes, Dr. and Mrs. Lance Impey, Dr. Hamilton Bell, Dr. Lennox Gordon, Mr. L. B. Goldschmidt, The Hon. Medical Staff of the Woodstock Hospital.
Dr. H. A. Moffat *by* Dr. and Mrs. Lance Impey, The President and Members of the South African Medical Council, Dr. A. W. S. Sichel, Mr. L. B. Goldschmidt.
Mr. T. B. Murray *by* Dr. J. J. van Zyl
Dr. J. Buchanan *by* Dr. G. M. Malan.
Dr. Louis Fourie *by* Dr. A. J. van der Spuy.

Total Amount Received from Votive Cards £70 5 0

Services Rendered to:
Dr. B. M. Zuidmeer *by* Dr. F. du T. van Zyl.
Dr. C. Kaufman *by* Dr. Fred Petersen.
Dr. G. P. de Kock *by* Drs. Vernon Brink and C. J. B. Muller.
Dr. J. Chaskalson *by* Mr. A. Lee McGregor and Dr. S. Hoffman.
Dr. S. Kahn *by* Dr. J. S. du Toit.
Mrs. Dr. M. C. Stander *by* Dr. J. S. du Toit.
Mrs. Dr. A. M. le Roux *by* Dr. F. V. Trotter.
Mrs. M. van de Wall wife of the late Dr. G. van de Wall *by* Drs. J. A. and F. D. du Toit.
Mrs. Malan, wife of Dr. G. M. Malan *by* Drs. Meyer, Jacobson, Van den Burgh, L. Mirvish F. du T. van Zyl and E. G. van Hoogstraten.

Total Amount Received from Services Rendered £75 1 0

Donations:

Proceeds from dance held by Cape Western Branch	£29	12	1
Drs. Charlton, Loots and Osler	3	3	0
Dr. H. F. Schiller		10	6
Dr. A. F. Stewart	1	1	0
Dr. T. A. Seekings	1	1	0
Dr. S. Annecke	2	0	0
Dr. J. W. Harris		6	6
Dr. J. Smith		10	0
Dr. J. Mibashan		5	0
Dr. R. P. Stafford	1	1	6
Dr. M. Herman		10	6
Dr. L. L. Nel		5	0
Dr. L. Lappin		7	0
Dr. T. S. Higgins		10	6
Dr. R. P. Snyman		10	6
	£187	0	1

REVIEWS OF BOOKS

INFORMATION DIGEST

Information Digest (January 1953). Edited by A. J. Dalzell-Ward and Priscilla Milton in conjunction with Anne Burgess. (Pp. 91–127. 1s. 6d.) London: The Central Council for Health Education.

Contents: 1. School Health. 2. Whooping Cough. 3. The M.O.H. Reports. 4. Accidents in the Home. 5. Health Education Programmes in Local Authorities.

The third issue of the *Information Digest* appears in a new form, the adoption of the columnar arrangement making for economy and ease of reading. The size is retained in order to permit of filing with previous issues.

The broad policy remains—to present all shades of current opinion on health matters in such a way as to provide material for health education. As this publication appears only twice yearly and its preparation forms only a fraction of the work of the Information Department, it cannot achieve up-to-the-minute topicality; neither is any claim made in this direction. Journals and reports which are published during the compilation of this digest must necessarily be reserved for future issues. For this reason the large section on School Health contains nothing from the Report on *The Health of the School Child, 1950–51*, which was received at the time of going to press.

STERILITY

Sterility: The Diagnostic Survey of the Infertile Couple. By Walter Williams, A.B., M.D. (Pp. 351 + xxiv, with 174 illustrations. $12.75.) Springfield, Massachusetts: Walter W. Williams. 1953.

Contents: 1. The Initial Interview. 2. Semen Analysis. 3. Semen Interpretation. 4. Testicular Biopsy. 5. Spermatic Cytology. 6. Medical Survey of Husband and Wife. 7. Uterotubal Insufflation and Miscellaneous Tests. 8. Hysterosalpingography. 9. Sperm Viability Tests. 10. Endometrial Biopsy and Miscellaneous Tests. 11. Interpretation of the Endometrial Biopsy. 12. Gynecolography. 13. The Basal Body Temperature Record as an Index to the Time and Quality of Ovulation. 14. Pathologic Ovulation. 15. Culdoscopy. 16. Tubal Salvage. 17. Résumé Visit. Bibliography. Appendix. Index.

Dr. W. Williams has long been associated with the problems concerning the investigation and treatment of sterility.

In this up-to-date survey he covers not only operative procedures, but also the important investigation and interpretation of the seminal fluid.

The volume, which is profusely and instructively illustrated, should prove of great value to the large number of medical practitioners in many branches of medicine concerned with the important subject of the infertile couple.

ANAESTHESIA AND ANALGESIA

Recent Advances in Anaesthesia and Analgesia (Including Oxygen Therapy). By C. Langton Hewer, M.B., B.S. (Lond.), M.R.C.P. (Lond.), F.F.A.R.C.S. Seventh Edition. (Pp. 440 + vii, with 169 illustrations. 30s.) London: J. & A. Churchill, Limited. 1953.

Contents: 1. Theoretical Aspects of Inhalational Anaesthesia. 2. Premedication. 3. Nitrous Oxide and the Hydrocarbon Gases. 4. Carbon Dioxide and Helium. 5. Modern Apparatus for the Administration of the 'Gas' Anaesthetics. 6. Recent Work on Ethers. 7. The Halogen-Containing Anaesthetics. 8. Recent Developments in Endotracheal Anaesthesia. 9. The Explosion Risk in Anaesthesia. 10. Intravenous Anaesthesia and Analgesia, Intramedullary Anaesthesia. 11. Muscle Relaxants. 12. General Aspects of Local Analgesia. 13. Drugs used in Local Analgesia. 14. Recent Advances in the Technique of Local Analgesia. 15. The Present Position of Spinal Analgesia. 16. Reduction of Haemorrhage during Operation. 17. Collapse and Resuscitation. 18. Anaesthesia and Analgesia for Neuro-Surgery. 19. Anaesthesia and Analgesia for Dental Surgery. 20. Anaesthesia and Analgesia for Endoscopy, Bronchography, for Nasal, Oral and Maxillo-Facial Surgery, and for Operations upon the Pharynx and Larynx: Use of Suction. 21. Anaesthesia and Analgesia for Thyroid and Thymic Surgery. 22. Anaesthesia and Analgesia for Thoracic Surgery. 23. Anaesthesia and Analgesia for Abdominal Surgery. 24. Anaesthesia and Analgesia in Obstetrics—Resuscitation of the Newborn. 25. Anaesthesia Sequelae. 26. Psychological Aspects of Anaesthesia and Analgesia. 27. Oxygen Therapy. 28. Anaesthetic Charts and Records. Index.

A notable feature of this edition is its increase in girth over its predecessor. This being the seventh edition in 20 years, one wonders if this is a middle-age spread, which is suggested by the not infrequent phrase 'recent work indicates . . .', only to find the reference to the 'recent work' is at least 20 years old! Pruning of much old work would seem desirable.

There is a new chapter on the reduction of bleeding, by hypotension, during operation, in which the author has given a balanced review. The chapter on muscle relaxants has,

naturally, been considerably expanded following the introduction of many new relaxing agents.

This book is important to those practising anaesthesia who are unable to keep up with the recent literature, which is fairly faithfully covered.

PARODONTAL DISEASE

Parodontal Disease: A Manual of Treatment and Atlas of Pathology. By E. Wilfred Fish, *C.B.E.*, M.D. (Manch.), D.D.Sc. (Melb.), D.Sc. (Lond.), F.D.S., F.C.S. (Eng.). Second Edition. (Pp. 252, with 87 illustrations. 30s.) London: Eyre & Spottiswoode Limited. 1952.

Contents: 1. The Nature and Actiology of Parodontal Disease. 2. The Dangers of Parodontal Disease. 3. Classification, Clinical Course and Diagnosis of Parodontal Disease. 4. Methods of Treatment and Results. 5. Individual Case Management and Systematic Approach. 6. Instruments and their Uses. 7. The Operation of Gingivectomy. 8. Complications and Difficulties. 9. Occlusal Trauma and Parodontal Splints. 10. Acute Ulcerative Stomatitis. 11. The Relation of Diagnosis to Treatment. Atlas of Pathology. Appendix. Index.

The purpose of the book is to outline a method of supervising the health of the parodontal tissues from infancy to old age, as well as to provide a practical guide to treatment and the carrying out of such surgical interference as may be found necessary.

Parodontal disease is a subject of constant importance to the student and practitioner of dental surgery, inasmuch as it is so prevalent amongst civilized peoples. The chronic forms of gingival inflammation affect nearly every patient who still possesses his own natural teeth.

The fact that in recent years it has become possible to eradicate dental foci of infection, except in the later stages of the disease, without subjecting the patient to the crippling ordeal of wholesale tooth extraction, has a direct bearing on the practice of general medicine.

The author has succeeded in recording his findings in a clear and concise manner. He has amply substantiated his arguments by means of excellent diagrams, illustrations and photomicrographs. Most valuable information can be had from the chapters dealing with *The Methods of Treatment and Results, Instruments and their Uses* and *The Operation of Gingivectomy*.

This book, in view of its practical value, is assured of a good reception. All dental surgeons will find it eminently readable, well prepared and useful.

INFECTIOUS MONONUCLEOSIS

Infectious Mononucleosis. By Sidney Leibowitz, M.D. (Pp. 163 + ix. $4.75.) New York: Grune & Stratton.

Contents: List of Illustrations and Tables. Acknowledgements. Foreword. 1. Introduction. 2. Clinical Considerations. 3. Additional Clinical Considerations. 4. Hematologic Considerations. 5. Serologic Considerations. 6. Conclusions. 7. Case Protocols. References. Index.

The author bases this monograph on 25 consecutive cases which he encountered over a period of 2 years, together with a comprehensive study of the literature on the subject. He says rightly that Bernstein's admirable monograph was published as long ago as 1940 in a journal (*Medicine*) and, therefore, is not so readily purchasable.

Twenty-eight per cent of the author's cases were jaundiced and in another 24% the serum bilirubin was between 1.4 and 4.3 mg. per 100 c.c. He has scrutinized 17 reports in the literature comprising 524 cases from the point of view of hepatic involvement and finds that from 40–100% of so-called liver function tests (in fact those tests which reflect changes in blood proteins) give abnormal figures. He draws the not very logical conclusion that: 'this hepatitis is an integral feature, not a complication, of most if not all cases of infectious mononucleosis'.

He has a good chapter on the serological tests; 24 of his 25 cases had a significant titre in the sheep-cell agglutination test—that is much better than most observers' results. The author has not been able to substantiate the finding of Eaton, Murphy and Harford that absorption by human liver can distinguish between Infectious Mononucleosis and Infective Hepatitis.

The chapter on the morphology of the blood cells leaves a good deal to be desired. Mention should have been made of the quite common finding that the enlarged lymph glands may be tender.

CORRESPONDENCE

TRADERS PRACTISING AS DOCTORS

To the Editor: Can nothing be done about traders who pose as 'doctors' and prescribe 'proprietary medicines'? In the Native Territories this is a common thing.

My reason for writing is that I have recently seen 2 cases of meningitis and 1 case of advanced pulmonary tuberculosis, in all 3 of whom correct treatment was delayed as the parents had been taking them to traders who were posing as 'doctors'—in the case of the tuberculous child, the child had been 'treated' for 6 months by a self-styled 'doctor'.

A month ago I had a case of tuberculous meningitis who had been 'treated' with proprietary and 'store' medicines for 4 months before she was brought to me. She died. Every case I have mentioned has died. I do not doubt but there are many other cases that have died because time was wasted in going to 'doctor' traders. The cases I have mentioned are only the ones I know for certain, having been informed by the relatives, the names of the 'doctor' traders being mentioned.

J. L. D. Paisley

P.O. Box 31,
Cala, C.P.
1 April 1953.

POST-GRADUATE TEACHING AT WITWATERSRAND

To the Editor: Having just completed a 3 months' course in the Department of Medicine at the Witwatersrand, I would like to make a few observations on the facilities for post-graduate teaching provided there.

The course was arranged through Prof. G. A. Elliott, from whom one received the utmost help and courtesy. The payment of a modest fee entitles one to registration as a post-graduate student, and allows one access to the hospital departments. There are daily staff rounds by the different firms, which are attended by outside practitioners. These are well arranged and cases are presented for discussion. These case-discussions cover a wide field. Then there are the Special Clinics—Cardiac, Neurological, Skins, Diabetes, Endocrine, Peripheral, Vascular and Hypertension. The seminars by the final-year students are well worth attending. These are conducted by the Professor weekly.

At the clinical laboratory and at the South African Institute for Medical Research, opportunities are provided for routine side-room investigation. The Library at the Medical School is open to all members of the Association. There is no organized didactic post-graduate teaching, but one doubts if this would be an advantage.

During the 3 months, one was able to cover a considerable field of recent advances in medicine. Accommodation—a difficult problem in Johannesburg—is provided for graduates at the University Residence at Cottesloe.

This course can be heartily recommended, but anyone who contemplates doing it must allow at least 3 months.

J. C. Downes.

P.O. Box 27,
Umtata.
1 May 1953.

The Medical Association of South Africa : Die Mediese Vereniging van Suid-Afrika

AGENCY DEPARTMENT : AGENTSKAP-AFDELING

JOHANNESBURG

Medical House, 5 Esselen Street. Telephone 44-9134-5, 44-0817
Mediese Huis, Esselenstraat 5. Telefone 44-9134-5, 44-0817

ASSISTENTE/PLAASVERVANGERS VERLANG
ASSISTANTS/LOCUMS REQUIRED

(L/V366) Wes-Transvaal. Plaasvervanger benodig vir Junie. Salaris £2 12s. 6d. per dag, vry losies en 'n kar sal verskaf word. Reiskaartjie sal betaal word.
(L/V371) O.F.S. Locum for July. Practically no night work. Terms: £2 12s. 6d. per day, all found. No car necessary.
(L/V372) Transvaal hospital town. Locum for 6 months as from 1 June. Salary £80 p.m. plus garage account paid.
(L/V373) O.V.S. Plaasvervanger vir Julie. Salaris £2 12s. 6d. per dag, vry petrol en olie en losies en 'n kartoelae van £10 per duisend myl, plus die bedrag van 'n eersteklas reiskaartjie vanaf verblyfplek.
(L/V344) Johannesburg. Plaasvervanger vanaf 27 Junie vir een maand. Vennootskapspraktyk.
(L/V384) Rhodesia. Locum for 2 months as from middle June. Salary £100 p.m. full board (including wife's if required), car provided and return rail fare.
(L/V386) Wes-Transvaal. Plaasvervanger vanaf 22 Junie tot 31 Julie. Vennootskappraktyk.
(L/V392) Reef. Locum for July. Terms: £3 3s. per day and all found.

PRAKTYKE TE KOOP : PRACTICES FOR SALE

(Pr/S74) O.V.S. Uitstekende praktyk met een myn-aanstelling van £400 per jaar. Aanstelling is definitief oordraagbaar. Jaarlikse inkomste van tussen £2,400 en £3,000 kan aansienlik vermeerder word. Premie is £750 en betaalbaar as volg: deposito van ongeveer £500 en balans teen £25 per maand. Huis en spreekkamers te huur teen £5 per maand.
(Pr/S77) Transvaal. Aangename privaat praktyk. Gemiddelde jaarlikse inkomste oorskrei £3,000. Elektriese krag. Gerieflike moderne woonhuis op twee erwe en moderne spreekkamers op aangrensende 2 erwe. Woonhuis teen £3,500 indien verlang en spreekkamers teen £1,500. Premie verlang is £1,750. Terme kan gereël word, asook ruim verband.
(Pr/S80) Free State hospital town. Rich farming area. Very well-established practice, netting £2,800 per annum. One appointment. Practically no night work and no Native practice. Premium required £1,750 and terms can be arranged.
(Pr/S81) Oos-Vrystaat. Geen opposisie. D.G. aanstelling teen £425 p.j. Jaarlikse inkomste £2,500. Premie van £750 sluit praktyk-toerusting, instrumente en medisyne in. As volg betaalbaar: £300 kontant en balans op maandelikse paaiemente; die bedrag waarvan onderling gereël kan word.

* * * *

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OPHTHALMIC PRACTICE FOR SALE

(1325) Excellent opportunity to acquire expanding practice with two appointments. The area served is enormous and the population is steadily becoming specialist conscious. Present income approximately £3,000 per year. Possibilities for expansion are exceptionally good.

ASSISTENTE/PLAASVERVANGERS VERLANG
ASSISTANTS/LOCUMS REQUIRED

(1338) Western Province hospital town. From 10 July for 3 weeks. £2 12s. 6d. per day, plus board and lodging, oil and petrol. Must have own car. Partnership practice.
(1335) Transkei hospital town. Assistant from July 1953 with definite view to partnership. Commencing salary £60—£70 p.m. according to experience.
(1328) Western Province. From early June or as soon as possible thereafter for 2 months in partnership practice. £2 2s. per day, plus board and lodging, petrol and car allowance.
(1354) Bolandse hospitaaldorp. Vanaf 20 Junie vir een maand, en weer vanaf 1 Desember vir een maand. Salaris £2 12s. 6d. plus 8d. per myl kartoelae. Reiskoste heen en terug.

KOOP VAN VENNOOTSKAPSAANDEEL

(1110) 'n Geneesheer met 'n heel paar jaar ondervinding in sy eie algemene praktyk stel belang in 'n vennootskap verkieslik in 'n hospitaaldorp, met 'n kollega wat taamlik snywerk doen. 'n Assistentskap met die oog op latere vennootskap sal ook oorweeg word.

* * * *

DURBAN

112 Medical Centre, Field Street. Telephone 2-4049

PRACTICES FOR SALE : PRAKTYKE TE KOOP

(PD13) Natal Lower South Coast practice, near Pondoland border, suitable for retired doctor. Area developing and large Police holiday camp in vicinity. Excellent climate and very good fishing. Premium required £400, includes good stock of drugs and dressings, instruments and dispensary furniture. House for sale £1,800, including stand of one-third morgen. Bond available. For immediate sale. Owner having taken a full-time appointment.
(PD15) General practice established 1941 at pleasant residential and seaside resort about 10 miles south of Durban. Annual income approximately £1,000. No major surgery, minimum of minor surgery and only emergency midwifery being done at present. Brick house with consulting room attached, for sale at £5,250. Owing to ill health owner wishes to retire from practice as soon as possible. Premium £1,000 including drugs, surgery and dispensary furniture.
(PD19) Eastern Pondoland. General country practice suitable for husband and wife. District Surgeoncy vacant. Gross receipts 1950, £2,114; 1951, £2,235; 1952, £2,221. Premium £500 includes drugs and furniture. One appointment. Practice and house for immediate sale.
(PD20) Natal South Coast. General mixed prescribing practice with 2 surgeries 11 miles apart. Premium £1,000 plus £200 for full equipment of 2 surgeries. Large proportion of the patients are European visitors, and Indians. A lucrative Native practice could be built up if dispensing was carried out. Immediate introduction.
(PD21) East Griqualand. General mixed practice with net profit of £3,000 annually. Excellent prospects. Premium £2,150.
(PD22) Natal. Prescribing and dispensing country practice. Total gross receipts for 1951, £3,344 15s. 9d.; 1952, £2,817 10s. 6d.; 1953 (3 months), £846 6s. 10d. Premium £1,500. House for sale £6,500.
(PD23) Natal. Prescribing practice particularly suitable for a woman doctor interested in obstetrics and gynaecology. Total gross receipts for 1950, £1,570; 1951, £1,595; 1952, (6 months), £1,340; 1953 (3 months), £382. Premium £1,250. includes furniture, fittings, instruments, drugs and existing book debts.

ASSISTENTE/PLAASVERVANGERS VERLANG
ASSISTANTS/LOCUMS REQUIRED

(134) Zululand. From 20 June to end of July. £3 3s. per day, plus board and lodging. Locum must be bilingual and possess own car.
(137) Month of July. East Griqualand. Largely Native, very little night work. Small hospital and occasional D.S. duties. £3 per day, plus board, lodging and equivalent of 1st class rail fare. Car will be provided, but if locum uses own car, allowance will be made.
(138) Assistant required immediately in general country practice near Pietermaritzburg. £1,000 per annum. Two appointments. Very little surgery or midwifery. Should possess own car.

City of Johannesburg

VACANCY

Applications are invited for the following vacant position in the non-European Affairs Department:

Medical Officer: Grade 10 (£996 × 12—£1,020 per annum).

In addition to the basic salary, a cost-of-living allowance is paid in accordance with the Council's resolution of 25 August 1942, as amended, which at existing rates will give a total monthly remuneration as shown.

Annual Salary	*Total monthly remuneration (including cost-of-living allowance)*
£	£ s. d.
1,020	112 12 7
996	110 12 7

Applicants must be medical practitioners registered to practice in South Africa and must be able to assume duty on 1 July 1953. Details of duties and conditions of service are obtainable from the Medical Officer of Health, P.O. Box 1477, Johannesburg.

The successful applicant will be required to undergo a medical examination and become a member of the Council's Pension Fund.

Personal canvassing for appointment in the gift of the Council is strictly prohibited. Proof thereof shall disqualify a candidate for appointment.

Applications in the candidates' own handwriting on special forms to be obtained from the Central Staff Office, Room 223, Municipal Offices, must be placed in the box in Room 223, Municipal Offices or posted so as to reach the Acting Town Clerk not later than 4 p.m. 14 days after publication of the *South African Medical Journal*.

D. Ross-Blaine
Acting Town Clerk
(2392/199)

City of Johannesburg

NON-EUROPEAN VACANCY

Applications are invited for the following vacant position in the non-European Affairs Department:

Medical Officer: Appointment to be made on any grade between Grade 19 (£600 × 12—£624 per annum) and Grade 16 (£732 × 12—£756 per annum) according to qualifications and experience.

In addition to the basic salary, a cost-of-living allowance is paid in accordance with the Council's resolution of 25 August 1942, as amended, which at existing rates will give a total monthly remuneration as shown.

Annual Salary	*Total monthly remuneration (including cost-of-living allowance)*
£	£ s. d.
756	90 12 7
732	88 12 7
624	79 12 7
600	77 12 7

Applicants must be medical practitioners registered to practice in South Africa and must be able to assume duty on 1 July 1953. Details of duties and conditions of service are obtainable from the Medical Officer of Health, P.O. Box 1477, Johannesburg.

Personal canvassing for appointment in the gift of the Council is strictly prohibited. Proof thereof shall disqualify a candidate for appointment.

Applications in the candidates' own handwriting on special forms to be obtained from the Central Staff Office, Room 223, Municipal Offices, must be placed in the box in Room 223, Municipal Offices or posted so as to reach the Acting Town Clerk not later than 4 p.m. 14 days after publication of the *South African Medical Journal*.

D. Ross-Blaine
Acting Town Clerk
(2391/200)

Transvaal Provincial Administration

VACANCIES: TRANSVAAL PUBLIC HOSPITALS

Applications are invited from suitably qualified candidates for the undermentioned posts at Public Hospitals in the Transvaal.

Applications should be addressed to the Medical Superintendents of the undermentioned Hospitals concerned and should contain full particulars as to the age, professional and academic and language qualifications, experience and conjugal status of the applicant and should further indicate the earliest date upon which duties can be assumed. Copies, only, of recent testimonials to be attached.

Cost-of-living allowance payable at present to full-time employees:

Salary	*Cost-of-Living Allowance* *Married*	*Single*
Over £350 per annum	£320 per annum	£100 per annum

Full-time employees receive in addition to their salaries and cost-of-living allowance, the following privileges:

Leave and rail concession.

Successful candidates will be required to submit satisfactory certificates as also to submit to a medical examination at the hospital concerned.

Application forms are obtainable from any Transvaal Provincial Hospital or the Provincial Secretary, Hospital Services Branch, P.O. Box 2060, Pretoria.

The closing date of applications for undermentioned posts will be 8 June 1953.

Hospital	*Post*	*Emoluments*	*Remarks*
Baragwanath Hospital Board and the University of the Witwatersrand	Assistant Ophthalmologist (1)	£1,200×50–1,500	Registered medical practitioner. Higher qualifications in Ophthalmology a recommendation.
Baragwanath Hospital Board (1) *and the University of the Witwatersrand*	Paediatric Registrar (1)	£620, £780, £820, £860	Registered medical practitioner.
Pretoria	Senior Bacteriologist (1)	£1,800	Registered medical practitioner.
Pietersburg	Clinical Assistant (Department of Anaesthetics) (1)	£620, 780, 820, 860	Registered medical practitioner.

(41005)

City of Cape Town

VACANCIES FOR HOUSE PHYSICIANS AND INTERNS

Applications are invited from medical practitioners for the positions of House Physicians and Interns at the City Infectious Diseases Hospital, Brooklyn Hospital for Chest Diseases and Langa Native Hospital. Appointment to the latter 2 hospitals is recognized by the South African Medical Council as compulsory 'Internship' in terms of the Medical, Dental and Pharmacy Act.

Appointments will endure for a period of 6 months commencing on 16 July 1953, and the salary will be at the rate of £360 per annum for House Physicians and £240 per annum for Interns, both plus board/residence, etc. in respect of the positions at the City Hospital and the Brooklyn Hospital for Chest Diseases. In addition to the above salary a temporary cost-of-living allowance at the statutory rate will be paid.

Applications endorsed 'Medical Appointments', stating age, qualifications, house appointments already held, if any, and other experience, accompanied by copies of not more than 3 recent testimonials, and addressed to the Medical Officer of Health, 12 Keerom Street, Cape Town, will be received up to noon on 17 June 1953.

M. B. Williams
Town Clerk

City Hall
Cape Town
30 May 1953
7855

(14031)

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICE: VACANCIES

1. Applications are invited for the following vacant posts:

Institution	*Post*	*Emoluments*	*Closing date*	*Applications to be addressed to:*
Provincial Hospital, Port Elizabeth	Medical practitioner Grade F. (Radiologist)	£1,800 p.a. (fixed)	17.6.53	The Director of Hospital Services, P.O. Box 2060, Cape Town.
Lady Michaelis Orthopaedic Home, Eaton Convalescent Home and Princess Alice Home of Recovery, Cape	Anaesthetist (Part-time 8 hours per week).	£292 p.a.	17.6.53	The Director of Hospital Services, P.O. Box 2060, Cape Town.
Sir Henry Elliot Hospital, Umtata	Medical practitioner, Grade A.	£500—600—660—720 p.a.	17.6.53	The Medical Superintendent, Sir Henry Elliot Hospital, Umtata.

2. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

3. In addition to the scale of salary indicated a cost-of living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees.

4. The successful candidates if not already in the Hospital Board Service will be required to submit satisfactory birth and health certificates.

5. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

6. Candidates must state the earliest date on which they can assume duty. (A562601)

Public Service Commission

VACANCIES IN THE PUBLIC SERVICE

1. The attention of medical practitioners, registered with the South African Medical and Dental Council, is drawn to an advertisement appearing in the *Government* and *Provincial Gazettes* of this week, inviting applications for the undermentioned posts:

Post	*Department*	*Salary Scale*
Medical Officer.	Health (Kimberley and Retreat)	£900×50—1,150
Medical Officer (on contract for 2 years).	Health (Nottingham Road)	£900×50—1,150
District Surgeon, Grade III.	Health (East London)	£900×50—1,150

2. In addition to salary a cost-of-living allowance at the rate of £320 per annum (married) and £100 per annum (single) is payable at present.

3. It is emphasised that full and detailed particulars of qualifications and previous experience must be furnished but original certificates and testimonials should not be submitted. Application forms Z.83 and P.S.C. 8(a) are obtainable from the Secretary, Public Service Commission, Pretoria, to whom filled in forms must be addressed.

4. The closing date for the receipt of applications is 20 June 1953. (41027)

Provinsiale Administrasie van die Kaap die Goeie Hoop

HOSPITAALDEPARTEMENT

HOSPITAALRAADSDIENS: VAKATURES

1. Aansoeke word ingewag vir die onderstaande vakante poste:

Inrigting	*Pos*	*Emolumente*	*Sluitingsdatum*	*Aansoeke moet gerig word aan:*
Provinsiale Hospitaal, Port Elizabeth	Geneesheer Graad F. (Radioloog)	£1,800 p.j. (vasgestel)	17.6.53	Die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad.
Ortopediese Tehuis Lady Michaelis, Eaton-herstellingstehuis en Princess Alice-herstellingstehuis, Kaap	Narkotiseur (Deeltyds, 8 uur per week).	£292 p.j.	17.6.53	Die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad.
Sir Henry Elliot-hospitaal, Umtata	Geneesheer, Graad A.	£500—600—660—720 p.j.	17.6.53	Die Mediese Superintendent, Sir Henry Elliot-hospitaal, Umtata.

2. Die diensvoorwaardes word voorgeskryf ingevolge die Ordonnansie op Hospitaalraadsdiens nr. 19 van 1941, soos gewysig, en die regulasies daarkragtens opgestel.

3. Benewens die salarisskaal soos aangedui is 'n lewenskostetoelae betaalbaar aan voltydse beamptes en werknemers wat van tyd tot tyd deur die Administrateur vasgestel word.

4. Die suksesvolle kandidate indien nie reeds in die Hospitaalraadsdiens nie moet bevredigende geboorte- en gesondheidsertifikate indien.

5. Aansoek moet gedoen word op die voorgeskrewe vorm (Staf 23) wat verkrygbaar is by die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad, of by die Mediese Superintendent van enige provinsiale hospitaal of by die Sekretaris van enige Skoolraad in die Kaapprovinsie.

6. Kandidate moet die vroegste datum meld waarop hulle diens kan aanvaar. (A562601)

S.A. Medical Journal
S.A. Tydskrif vir Geneeskunde

The *Journal* is published weekly on Saturdays.
Office: Medical House, 35 Wale Street, Cape Town.
Postal Address: P.O. Box 643, Cape Town. Telephone 2-6177
Telegrams: *Medical*, Cape Town.
Proprietors and Publishers: Medical Association of South Africa.
The *Journal* is supplied to all members whose names are furnished by the Branch Secretaries.
Subscription for non-members, 84s. per annum, post free, payable in advance, can be commenced at any time. Single copies, 2s. 6d.
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Author's reprints of papers can be obtained at cost. Order blanks will be forwarded to authors when page proofs are ready.

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

1. Applications are invited from medical graduates for appointment to posts of Junior Resident Medical Officer (intern) at the undermentioned institutions:

Frere Hospital, East London: 10 posts.
Woodstock Hospital, Woodstock: 3 posts.
Rondebosch and Mowbray Hospital, Cape: 2 posts.
Victoria Hospital, Wynberg: 4 posts.
False Bay Hospital, Simonstown: 1 post.
Peninsula Maternity Hospital, Cape: 3 posts.
Mowbray Maternity Hospital, Cape: 2 posts.
Cape Town Free Dispensary: 1 post.
Somerset Hospital, Cape Town: 10 posts.
Sir Henry Elliot Hospital, Umtata: 1 post.
Settlers' Hospital, Grahamstown: 2 posts.
Groote Schuur Hospital, Cape Town: 41 posts.
Conradie Hospital, Pinelands: 2 posts.
Provincial Hospital, Port Elizabeth: 2 posts.
Livingstone Hospital, Port Elizabeth: 1 post.

2. The salary attaching to a post of Junior Resident Medical Officer (intern) is £240 per annum plus board, quarters and laundering.

3. In addition to the salary and allowance stated above, a temporary non-pensionable cost-of-living allowance is payable at rates and on the conditions that may be prescribed by the Administrator from time to time.

4. Candidates applying for more than one post should submit separate applications and copies of testimonials for each post applied for.

5. Candidates writing the final M.B., Ch.B. examination can submit their applications prior to the results of the examination being known.

6. Successful candidates will be required to enter into contracts with the Provincial Administration with effect from 16 July 1953, and must be registered with the South African Medical Council before they will be allowed to assume duty.

7. Candidates who wish to enter as interns at Groote Schuur Hospital, Cape Town, should state:

(1) Whether they are prepared to accept any internship which is offered them; and

(2) indicate their preference for the following Departments by marking against them 1, 2, 3, etc.

a. General Medicine.
b. General Surgery.
c. Gynaecology and Obstetrics.
d. Other departments to be specified by applicants.

8. The appointment will be in terms of and subject to the provisions of Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

9. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Branch Representative of the Hospitals Department, P.O. Box 1487, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

10. The completed forms must be forwarded to reach the Medical Superintendent of the institutions concerned not later than 20 June 1953. (A562978)

Assistant: Isotope Section

There is a vacancy for an assistant in the Isotope Section of a private radio-therapeutic practice. At least one year's course in physics is essential. Salary will depend on qualifications. It may be possible to arrange a part-time post which would mean 8.30 a.m. to 1 p.m. For further particulars write 'A. Q. X.', P.O. Box 643, Cape Town.

Provinsiale Administrasie van die Kaap die Goeie Hoop

HOSPITAALDEPARTEMENT

1. Aansoeke word ingewag van mediese gegradueerdes vir aanstelling in die betrekking van Junior Inwonende Mediese Beampte (intern) aan die ondergemelde inrigtings:

Frere-hospitaal, Oos-Londen: 10 poste.
Woodstock-hospitaal, Woodstock: 3 poste.
Rondebosch- en Mowbray-hospitaal, Kaap: 2 poste.
Victoria-hospitaal, Wynberg: 4 poste.
Valsbaai-hospitaal, Simonstad: 1 pos.
Skiereilandse Kraam-hospitaal, Kaap: 3 poste.
Mowbray-kraamhospitaal, Kaap: 2 poste.
Kaapstadse Vrye Apteek: 1 pos.
Somerset-hospitaal, Kaapstad: 10 poste.
Sir Henry Elliot-hospitaal, Umtata: 1 pos.
Setlaarshospitaal, Grahamstad: 2 poste.
Groote Schuur-hospitaal, Kaapstad: 41 poste.
Conradie-hospitaal, Pinelands: 2 poste.
Provinsiale-hospitaal, Port Elizabeth: 2 poste.
Livingstone-hospitaal, Port Elizabeth: 1 pos.

2. Die salaris verbonde aan 'n pos van Junior Inwonende Mediese Beampte (intern) bedra £240 per jaar, plus losies, inwoning en wasgoed.

3. Benewens die salaris en toelae hierbo vermeld, is daar 'n tydelike nie-pensioengewende duurtetoeslag betaalbaar volgens die skaal en op voorwaardes wat van tyd tot tyd deur die Administrateur voorgeskryf word.

4. Kandidate wat om meer as een betrekking aansoek doen, moet afsonderlike aansoeke en afskrifte van getuigskrifte voorlê vir elke betrekking waarom aansoek gedoen word.

5. Kandidate wat die finale M.B., Ch.B. eksamen skryf, kan hul aansoeke instuur voordat die uitslag van die eksamen bekend is.

6. Van die geslaagde kandidate word vereis om 'n kontrak met die Provinsiale Administrasie met ingang van 16 Julie 1953, aan te gaan, en hulle moet by die Suid-Afrikaanse Mediese Raad geregistreer wees voordat hulle toegelaat sal word om diens te aanvaar.

7. Kandidate wat as interne by Groote Schuur-hospitaal, Kaapstad, aangestel wil word moet:

(1) Meld of hulle gewillig is om enige pos van intern aan te neem wat hulle aangebied word; en

(2) hul voorkeur ten opsigte van die volgende afdelings aandui deur 1, 2, 3, ens. teenoor die afdelings te skryf:

a. Algemene Geneeskunde.
b. Algemene Heelkunde.
c. Ginekologie en Verloskunde.
d. Ander departemente moet deur applikante vermeld word.

8. Aanstellings geskied ooreenkomstig en onderworpe aan die bepalings van Ordonnansie nr. 19 van 1941, soos gewysig, en die regulasies wat daarkragtens opgestel is.

9. Aansoek moet gedoen word op die voorgeskrewe vorm (Staf 23) wat verkrygbaar is by die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad, of by die Takverteenwoordiger van die Hospitaaldepartement, Posbus 1487, Kaapstad, of by die Mediese Superintendent van enige provinsiale hospitaal of by die Sekretaris van enige Skoolraad in die Kaapprovinsie.

10. Die ingevulde aansoekvorms moet gerig word aan die Mediese Superintendent van die betrokke inrigting, en moet hom nie later as 20 Junie 1953, bereik nie. (A562978)

Practice for Sale

Eastern Cape dispensing practice in hospital town. Gross income about £2,300. Premium £750, which includes goodwill, drugs, instruments, and surgery furniture. House for sale. Details on application. Write 'A. Q. V.', P.O. Box 643, Cape Town.

For Sale

A combined infra-red and ultra-violet lamp 'Sperti Irradiation, U.S.A.' in perfect condition. Hardly used. Price £15. Write 'A. Q. W.', P.O. Box 643, Cape Town, or Telephone 7-0210, Cape Town.

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICE

1. Applications are invited from registered medical practitioners for appointment to the following vacant post:

Institution	*Post*	*Emoluments*	*Closing date*	*Applications to be addressed to:*
Settlers' and Prince Alfred Hospital, Grahamstown	Medical Practitioner, Grade C. (Medical Superintendent)	£1,000 × 50–1,200 p.a.	20.6.53	The Director of Hospital Services, P.O. Box 2060, Cape Town.

2. Conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

3. In addition to the scale of salary indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees.

4. The successful candidate will be required to occupy, free of charge, an unfurnished house or quarters provided at the institution or alternatively, if a house or quarters are not available to occupy a house approved by the Department in respect of which the Department will contribute an amount of not exceeding £180 per annum towards the rental.

5. The successful candidate, if not already in the Hospital Board Service, will be required to submit satisfactory birth and health certificates.

6. Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Branch Representative of the Hospitals Department, P.O. Box 1487, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

7. Candidates must state the earliest date on which they can assume duty. (A562993)

Provinsiale Administrasie van die Kaap die Goeie Hoop

HOSPITAALDEPARTEMENT

HOSPITAALRAADSDIENS

1. Aansoeke word ingewag van geregistreerde geneeshere vir aanstelling tot die volgende vakante pos:

Inrigting	*Pos*	*Emolumente*	*Sluitingsdatum*	*Aansoeke moet gerig word aan:*
Setlaars- en Prince Alfred-hospitaal, Grahamstad	Geneesheer, Graad C. (Mediese Superintendent).	£1,000 × 50–1,200 p.j.	20.6.53	Die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad.

2. Die diensvoorwaardes word voorgeskryf ingevolge die Ordonnansie op Hospitaalraadsdiens nr. 19 van 1941, soos gewysig, en die regulasies wat daarkragtens opgestel is.

3. Benewens die salarisskaal soos aangedui is 'n lewenskostetoelae betaalbaar aan voltydse beamptes en werknemers teen bedrae wat van tyd tot tyd deur die Administrateur vasgestel word.

4. Van die geslaagde kandidaat sal dit vereis word om 'n ongemeubileerde huis of kwartiere wat by die hospitaal verskaf word gratis te bewoon, of as 'n huis of kwartiere nie beskikbaar is nie, 'n huis te bewoon wat deur die Departement goedgekeur is ten opsigte waarvan die Departement 'n bedrag van hoogstens £180 per jaar tot die huur sal bydra.

5. Die geslaagde kandidaat, indien nie reeds in die Hospitaalraadsdiens nie, moet bevredigende geboorte- en gesondheidsertifikate indien.

6. Aansoek moet gedoen word op die voorgeskrewe vorm (Staf 23) wat verkrygbaar is by die Direkteur van Hospitaaldienste, Posbus 2060, Kaapstad, of by die Takverteenwoordiger van die Hospitaaldepartement, Posbus 1487, Kaapstad, of by die Mediese Superintendent van enige provinsiale hospitaal of by die Sekretaris van enige Skoolraad in die Kaapprovinsie.

7. Applikante moet die vroegste datum meld waarop hulle diens kan aanvaar. (A562993)

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICE

QUEEN MARY HOSPITAL, UITENHAGE

VACANCY: MEDICAL PRACTITIONER GRADE "A"

Applications are invited from registered medical practitioners for appointment to the post of medical practitioner Grade "A" at the Queen Mary Hospital, Uitenhage.

The appointment will be made in terms of and will be subject to the Hospital Board Service Ordinance 1941 and the regulations framed thereunder.

Salary on the scale £500—£600—£660—£720 per annum plus a temporary cost-of-living allowance as prescribed from time to time by the Administrator.

The successful applicant will be required to enter into a contract which shall not exceed a period of 4 years and shall be subject to termination at any time on 90 days' notice on either side.

Applications, containing particulars of experience, qualifications, etc., together with copies of testimonials and stating earliest date on which duty can be assumed, to be forwarded to reach the Medical Superintendent, Queen Mary Hospital, P.O. Box 177, Uitenhage, not later than noon on Saturday 13 June 1953.

(A562994)

Provinsiale Administrasie van die Kaap die Goeie Hoop

HOSPITAALDEPARTEMENT

HOSPITAALRAADSDIENS

QUEEN MARY-HOSPITAAL, UITENHAGE

VAKATURE: GENEESHEER GRAAD "A"

Aansoeke word ingewag van geregistreerde geneeshere vir aanstelling tot die pos van geneesheer, Graad A, by die Queen Mary-hospitaal, Uitenhage.

Die aanstelling geskied ingevolge en onderworpe aan die Hospitaalraadsdiens Ordonnansie 1941 en die regulasies ingevolge daarvan opgestel.

Salaris volgens die skaal £500—£600—£660—£720 per jaar plus 'n tydelike lewenskostetoelae wat van tyd tot tyd deur die Administrateur voorgeskryf word.

Van die suksesvolle kandidaat sal vereis word om 'n kontrak aan te gaan vir 'n tydperk van hoogstens 4 jaar en sal onderhewig wees aan beëinding van diens ter eniger tyd met 90 dae kennisgewing van albei kante.

Aansoeke met besonderhede van ondervinding, kwalifikasies, ens. saam met afskrifte van getuigskrifte en vermelding van die vroegste datum waarop diens aanvaar kan word, moet aan die Mediese Superintendent, Queen Mary-hospitaal, Posbus 177, Uitenhage gerig word en moet hom nie later as 12 vm., Saterdag, 13 Junie 1953, bereik nie.

(A562994)

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MEDICAL HOUSE, 35 Wale Street, Cape Town. P.O. Box 643. Telephone 2-6177. Telegrams: 'Medical'